ENGINEERING: SOLVING THE MYSTERIES OF DERAILMENTS

January 10, 1972

RAILWAY AGE

MOVING PEOPLE

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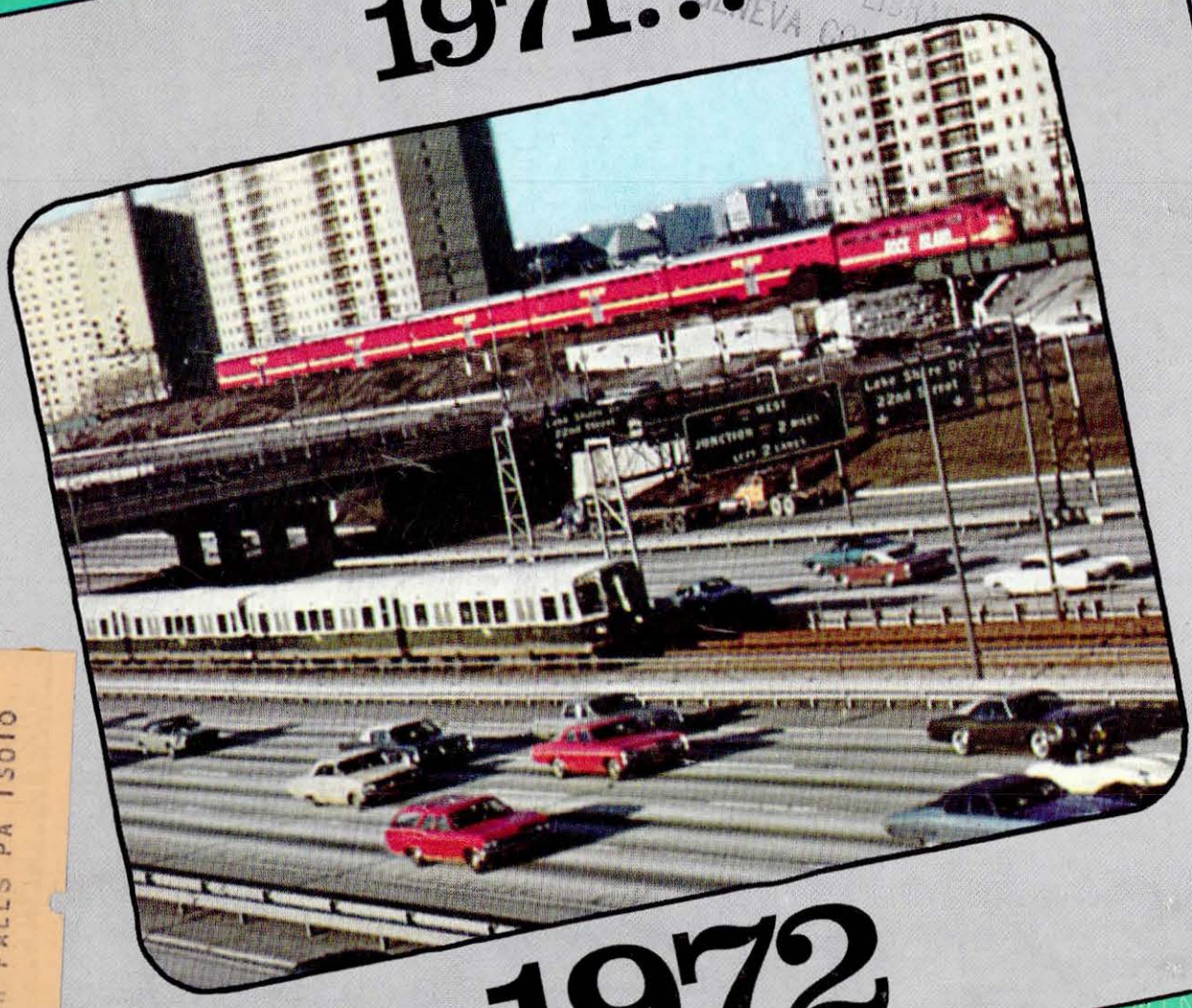

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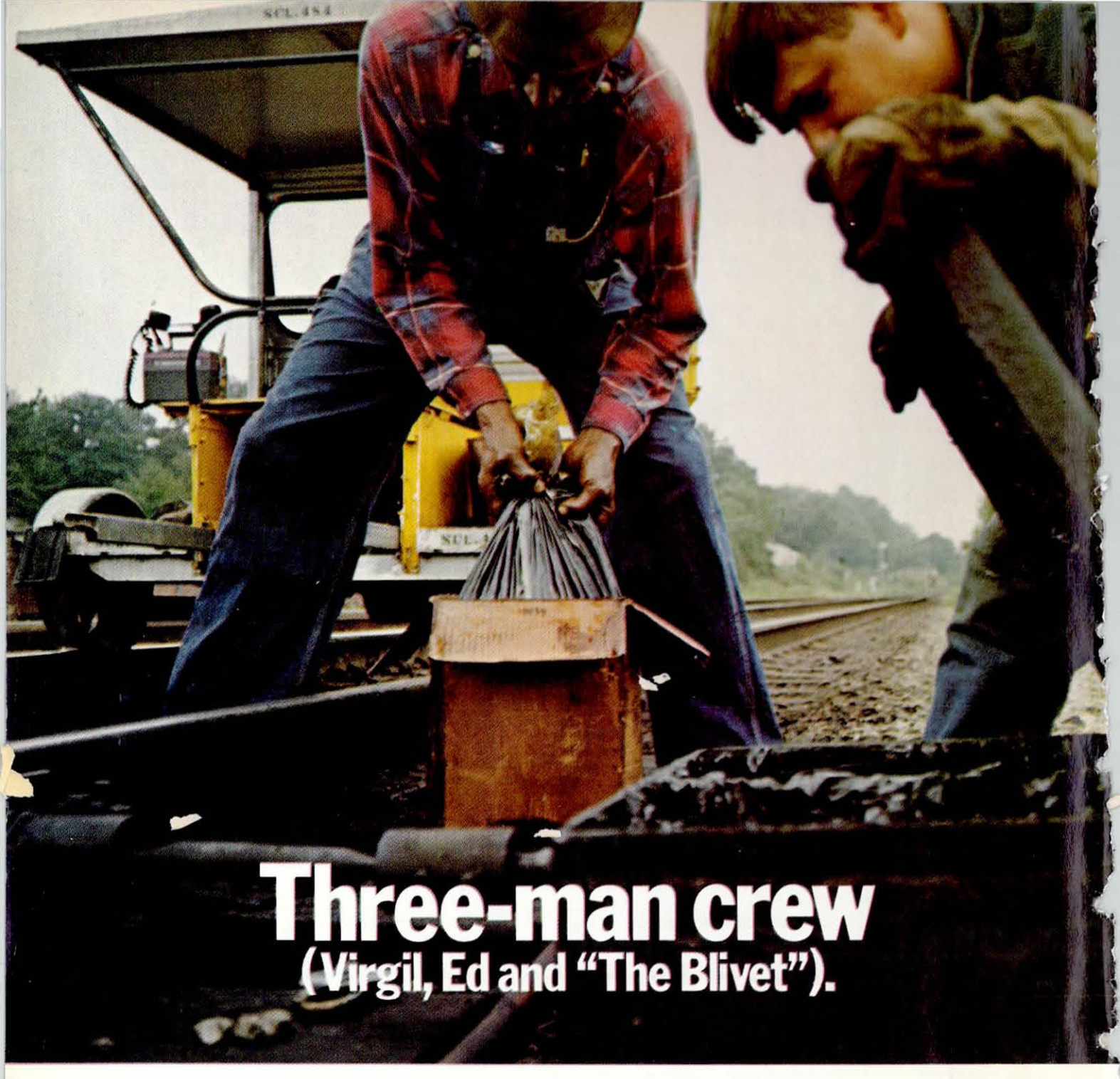

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(Virgil, Ed and "The Blivet").

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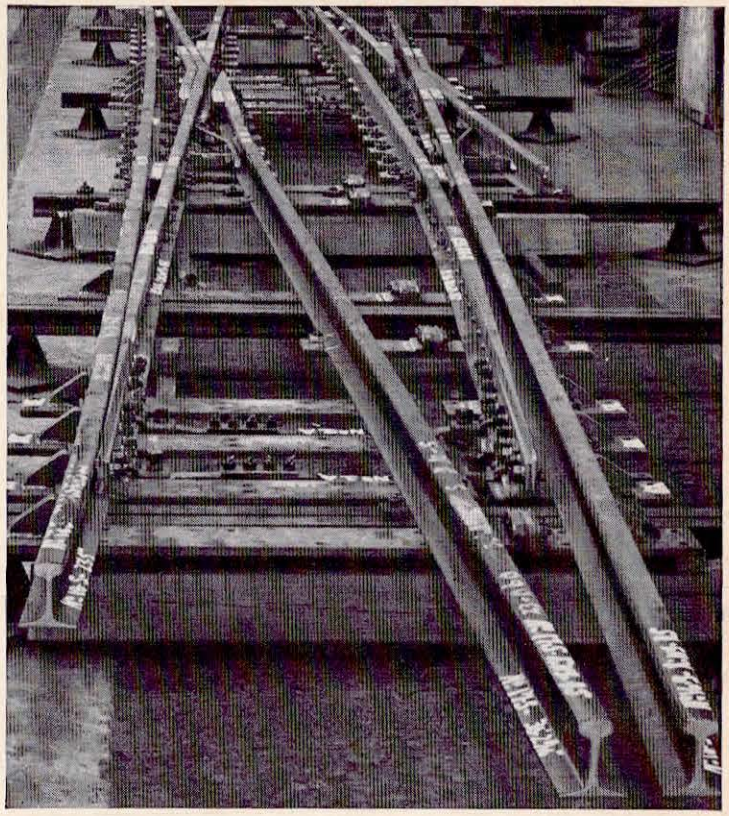

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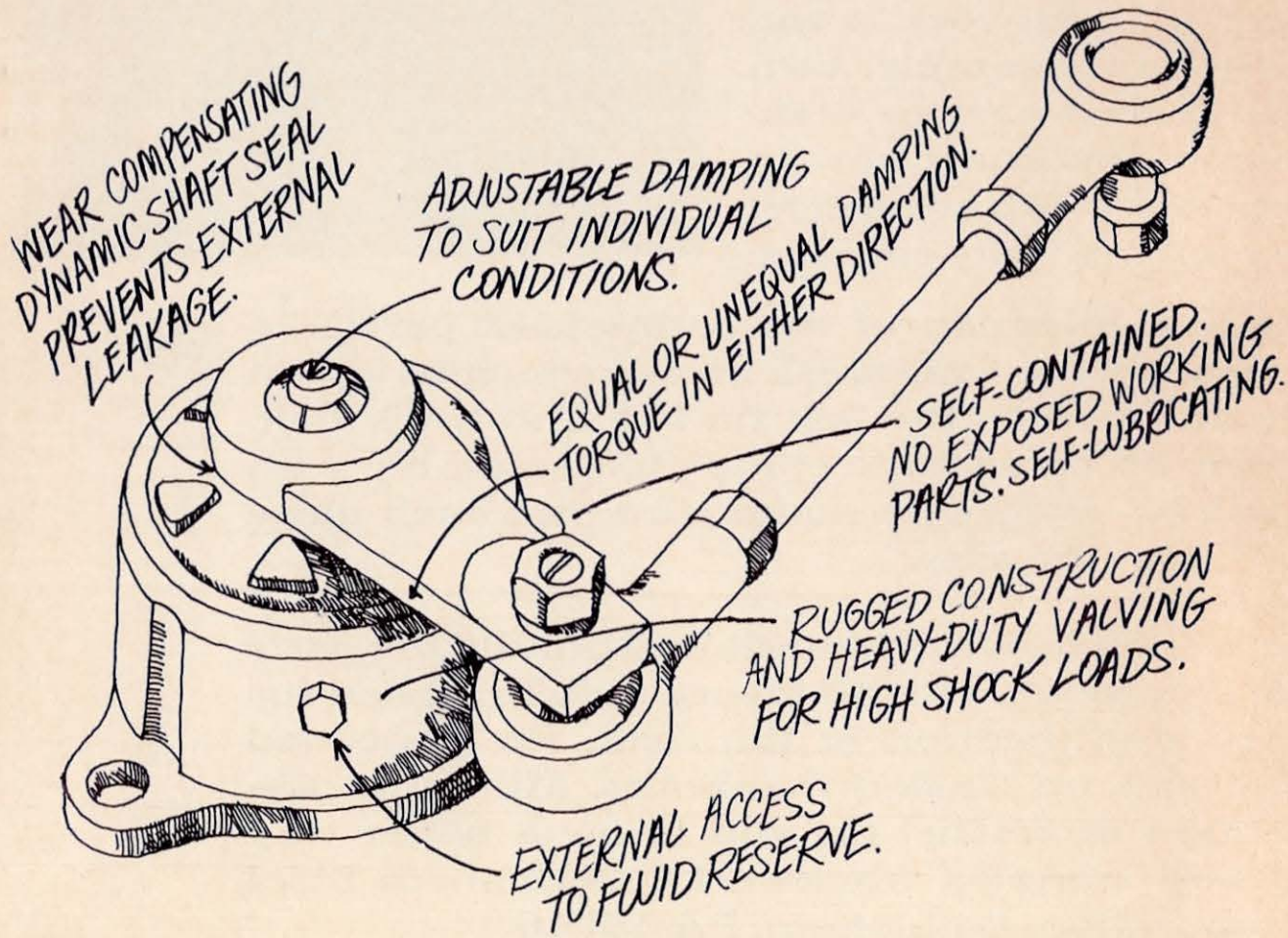
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RAILWAY AGE

January 10, 1972 • Vol. 172 No. 1

Editorial and Executive Offices
New York, N.Y. 10013, 350 Broadway
(212) 966-7700

ROBERT G. LEWIS: Publisher
LUTHER S. MILLER: Editor
FRED C. MILES: Executive Editor

Mechanical: Fred N. Houser
Art Director: Maurice H. Mates
Editorial Assistant: June Meyer
Librarian: Edith C. Stone
Production Manager: Fred B. Hecht
Manager—Contract Department:
Constance Nicolai
Promotion Director: George Dusenbury

Editorial and Executive Offices
Chicago, Ill. 60602, 29 E. Madison St.
(312) 641-5815

C. JAMES FISHER: Vice President—Sales
GUS WELTY: Senior Editor

Mechanical: Robert D. Bartley
Engineering:
Merwin H. Dick R.E. Dove
Signaling & Communications:
Robert W. McKnight
Editorial Assistant: Wanda Brown

Washington, D.C. 20004,
National Press Bldg. (202) 347-1155
Washington Editor: Reid Beddow

Brighton, Sussex, England
8 St. George's Place, (Brighton 685867)
International Editors:
John Levett Paul Goldsack

Advertising Sales Offices:
See Advertising Index

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Inside

LUTHER MILLER

THE NEW TRAINS vs THE OLD

We have often stated our conviction that the long-distance passenger train is in its last convulsions, and that those who would continue to apply costly artificial respiration are doing no one a favor. Only when we have buried the past can we get on with the future—and there is, we believe, a useful future for the passenger train: in busy corridors, in suburban operations, and within our cities.

But none of these conventional services is going to be operated at a dollar profit. They are going to require substantial public investment. At last the trend seems to be in that direction, as Joe Asher points out in this issue's cover story **(p. 18)**.

Will the investment be worthwhile? Will the public get a fair return on its dollars?

Addressing himself to that part of the problem represented by Amtrak, Burlington Northern President Louis W. Menk suggested recently that in certain instances it will indeed be a sound investment. While restating his doubts as to the viability of long-distance service, Mr. Menk at the same time went on record with the statement that "an investment by the government . . . for a money-losing yet socially necessary service . . . will prove to be a sound one for certain corridor areas of the nation." This must have astonished those who have regarded the Menks of the railroad world as implacable foes of any kind of passenger service.

Said Menk: "Neither the national highway network nor the U.S. merchant marine operates at a profit. Yet both are considered worth their dollar cost in terms of over-all benefits provided. Railroad passenger train service in certain areas is, I submit, just as worthy of national support."

That support will be forthcoming, we believe, if it responds to a demonstrable need, whether it be intercity or intracity. But "need" must be clearly distinguished from wishful nostalgia.

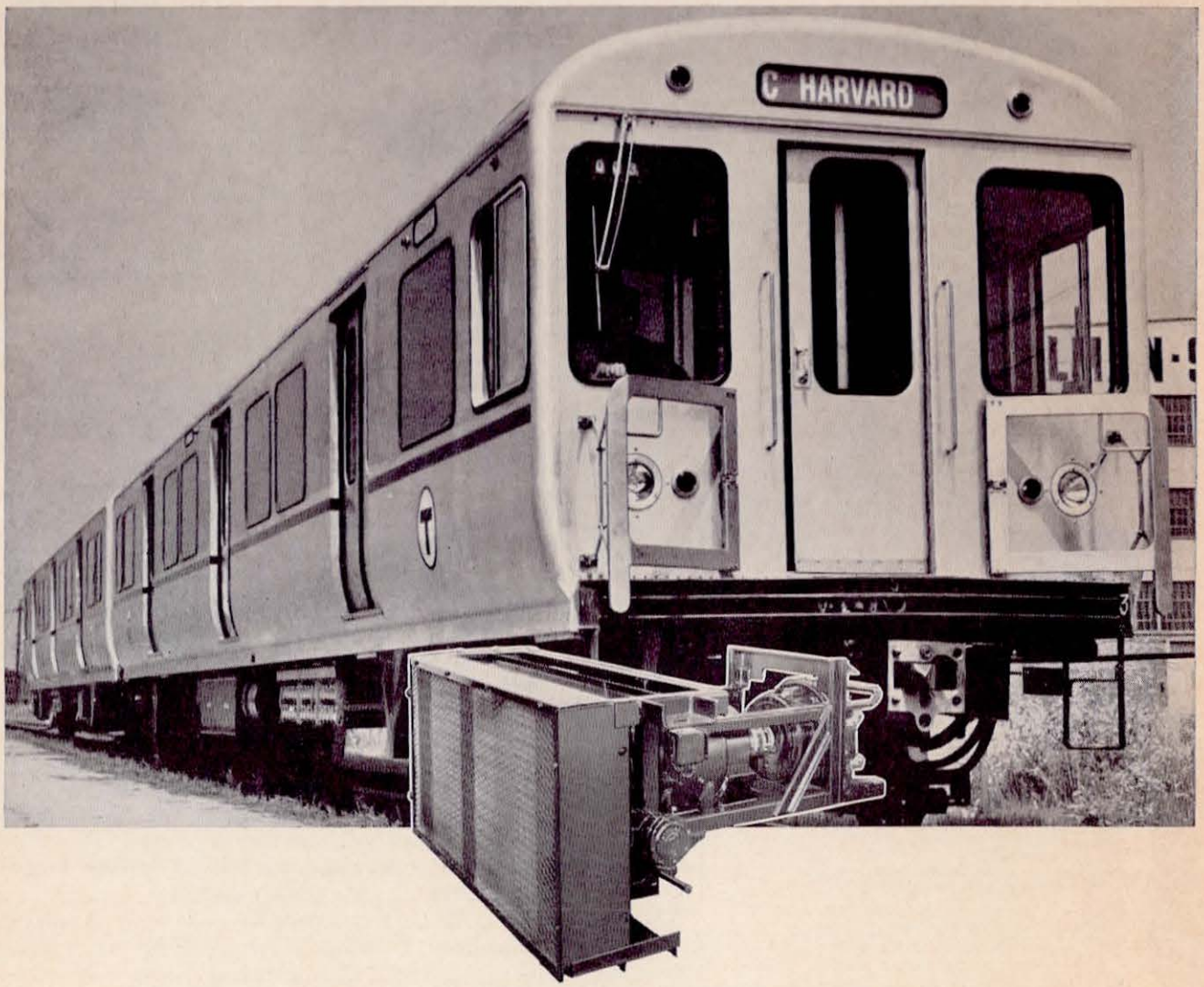
Unfortunately, passenger-train enthusiasts have not always been able to make that distinction.

AUTO-TRAIN: A HAPPY EXCEPTION

EUGENE GARFIELD

An unconventional train that does show promise of a profit is responsible for the happy smile on the face of the man in the cut. He is Eugene Garfield, president of Auto-Train Corp. Garfield readily concedes that the Auto-Train situation is a special one, from which it would be unwise to try to derive any moral applicable to passenger service generally. Nonetheless he is very happy with his special situation. He tells why in the interview which begins on p. 22.

"Safety" air conditioning: the system of the 70's



All 76 of the new 70-mile-per-hour MBTA cars have a "Safety" 12-ton component type air conditioning system. It consists of two 6-ton evaporator and blower assemblies, a combination air cooled condenser-compressor unit, and a motor control panel. The system is arranged for operation at nominal 600 volt DC power supply and 32 volt DC control voltages. "Safety" Control Panels are compact, simplified. They start the compressor motor and they keep it running efficiently . . . and dependably!

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RAILWAY AGE

January 10, 1972

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COVER

The cover photo—showing Rock Island's suburban line and Chicago Transit Authority's Dan Ryan Expressway median-strip line—was taken by Edward J. Wojtas, editor of Rock Island's employee magazine, the Rocket.

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Short and Significant

MOPAC PLANS RECORD SPENDING

Missouri Pacific will invest more than $92 million in capital improvements in 1972—an all-time MoPac record and an increase of $19 million from 1971 figures. MoPac Chairman and President Downing B. Jenks points out that his road has already announced a record $64-million program for motive power and freight cars "and may increase it during the year."

AMTRAK APPROPRIATION IS IN TROUBLE

An appropriation to give Amtrak $177 million for operating expenses until July 1973 is in trouble in the House, where members are proving unenthusiastic or attaching impossible riders. Chairman Harley O. Staggers of the Interstate and Foreign Commerce Committee reportedly wants Amtrak to send a TurboTrain to Parkersburg, W. Va., for instance. Even if the appropriation passes, Amtrak officers moan at repeating the process every two years. Any legislation probably will express a "sense of Congress" injunction for Amtrak to set a deadline for hiring its own non-operating employees away from rails.

AMSTED EXPANDING ITS RESEARCH PROGRAM

AMSTED Industries' American Steel Foundries unit is buying a $300,000-plus fatigue-test device—described as one of the largest ever built—as part of a program "to significantly expand and upgrade railroad research activities." ASF President Carl O. Sundberg says his company's goal will be to fatigue-test the complete product line—including cast steel bolsters, side frames (which have been so tested for the past 25 years), brake beams, couplers and yokes. The new machine will be able to exert dynamic loads of up to 700,000 pounds—loads which can be applied as many as one million times in a 30-hour period. Says Sundberg: "Years of railroad service can be duplicated in just a few days."

RSA PLANS FALL OUTDOOR EXHIBIT

The Railway Supply Association has completed negotiations with Illinois Central for use of 6,000 feet of track space at the road's Central (12th Street) Station in Chicago for outdoor exhibits in connection with this year's Coordinated Mechanical Associations meeting, Sept. 17-20. Although the exhibit location has 4,000 fewer feet of track than was available for the big 1963 outdoor exhibit, RSA's executive secretary, A. Schiffers, Jr., says the area "is ideal, with paved walkways and a roof over the tracks." Another 20,000-22,000 feet of indoor exhibit space at the convention hotel, Sherman House, is also being sought, according to Schiffers.

AC MOTORS TESTED IN REVENUE SERVICE

A PWM (pulse-width-modulation) propulsion system involving alternating-current traction motors powered from a direct-current supply is being tested in revenue service by Cleveland Transit System. Carlos C. Villarreal, Urban Mass Transportation Administrator, was present Jan. 4 for introduction of the first of three cars scheduled for PWM installations under a UMTA $1.3-million R&D grant. The three CTS "Airporters" are also getting restyled interiors to enhance passenger comfort and appeal. Westinghouse Air Brake has been developing the new traction system over the past six years; Peter Muller-Munk Associates handled the new styling.

BEVAN DENIES FRAUD, SEEKS EARLY TRIAL

David C. Bevan, former $132,000-a-year finance chairman of the Penn Central, was accused along with two business associates Jan. 4 of diverting funds from the railroad to illegal uses. In Philadelphia, District Attorney Arlen Specter said Jan. 5 that actions of Bevan, Charles J. Hodge and Albert F. Lassiter contributed to the road's bankruptcy. "I have been the scapegoat long enough," said Bevan as he asked for an early trial on the charges, which he called "baseless" and "incredible." The criminal warrants alleged fraud in connection with (1) a plan to invest $21 million in Executive Jet Aviation (then headed by Lassiter) in violation of CAB regulations; and (2) the "manipulating" of Penn Central investments to benefit a private investment club formed by Bevan and Hodge and known as PenPhil.

SANTA FE WINS BROADER TRUCKING RIGHTS

ICC, overruling its hearing examiner and motor carrier protests, has granted general commodity authority to Santa Fe Trail Transportation Co., a wholly owned subsidiary of the Santa Fe Railway, between Marietta, Okla., and Dallas-Fort Worth. ICC said protesting carriers were failing to provide adequate small-shipment service. Santa Fe Trail has established and shippers "are entitled to better service than they are receiving on their LTL traffic," ICC said.

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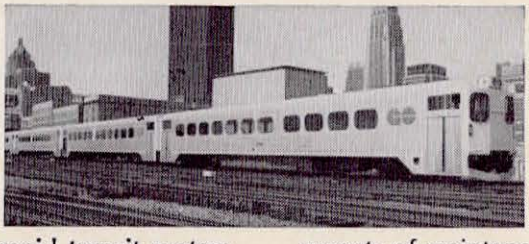
We helped break up the love affair between the commuter and his car.



Thousands of commuters in the Province of Ontario have happily kicked the daily car habit.

They're kissing goodbye and riding to work by GO Transit. Operated by the Government of Ontario, this rapid transit system is 60 miles long and one of the most highly regarded in North America.

The system has many appealing features. One is the cars. They're quiet and comfortable. Cool in summer. Warm in winter. Easy to enter and leave.

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Our experience in building this advanced type of commuter and mass transit car is unique in North America. We've proved it in Montreal with the Expo mass transit system. And in Ontario with GO Transit and the Toronto Transit Commission's subway system.

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RAILWAY AGE
NEWS

Florida East Coast strike: The beginning of the end

On a basis which seems to have left all parties reasonably satisfied, Florida East Coast and 11 non-operating unions are moving to end one of the longest strikes ever to occur in U.S. industry. Both the railroad and the organizations can claim gains. Perhaps just as important, both the railroad and the organizations can look forward to an end to the litigation which has kept them before one court or another for most of the time since the walkout began back in January 1963.

At the heart of the proposed settlement—which now has preliminary court approval—is an agreement worked out by FEC and 10 of the unions in March 1971 and joined in by the 11th organization, the Brotherhood of Railroad Signalmen in November, after further talks. Among the major provisions:

—Rates of pay in effect Jan. 22, 1963, are to be increased by 25% retroactive to Jan. 16, 1971. Additional increases of 6% each are to take effect Jan. 1 of 1972, 1973 and 1974.

—With the exception of union-shop agreements, work rules in effect Jan. 22, 1963 (as modified by subsequent agreement and excluding agreements which have expired by their own terms), are to remain in effect without change for four years.

—In the event of work stoppages, FEC may use exempt employees to perform any work in an effort to maintain operations.

—All claims for damages as a result of alleged rules violations and/or violation of a court injunction issued in 1964 are to be settled by payment of $1.5 million by FEC to U.S. District Court in three installments. Distribution of the money to the unions and individual claimants will be made by order of the court.

—Pending civil litigation is to be dismissed, with prejudice.

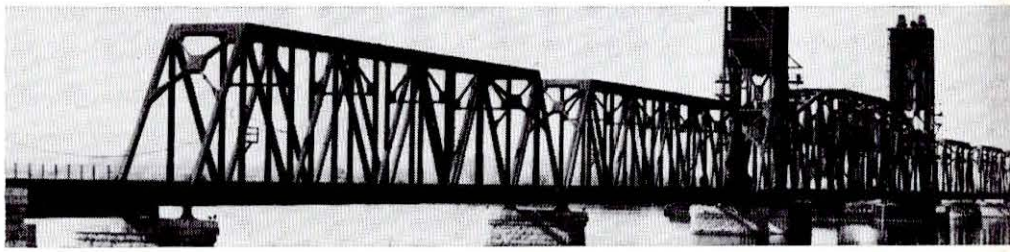
—Over a four-year period, FEC will bulletin 478 jobs on which bidding rights will be limited to employees now on rosters who were in service of FEC or on leave of absence Jan. 1-23, 1963, and who do not now hold assigned positions with FEC. Ninety-five of these "special" positions will be bulletined as of consummation and final court approval of the agreement; a minimum of 24 "special" positions will be bulletined each three months for the next four years. Roughly 40% of these positions will be for maintenance-of-way personnel, about 20% each for clerks and shop-craft personnel and the rest split among telegraphers, signalmen and roadway shop employees.

In a second agreement arrived at in November 1971, FEC and the non-ops approved a voluntary union-shop arrangement. Under this modification of a 1953 agreement, (1) each active employee holding seniority in a class of craft represented by one of the unions and holding membership in the organization has the option of retaining that membership if he exercises the option between Jan. 1 and Jan. 30, 1972; (2) any employee acquiring seniority in such a class of craft who was not a union member as of the effective date of the agreement may remain a non-union employee. Neither the member who does not exercise his option of retaining membership nor the employee who chooses not to join will be subject to any action by the organization involved.

It will take a while to write a meaningful post-mortem on the FEC non-op strike. It started, essentially, as a wage dispute in which FEC declined to apply increases which had been negotiated on a national basis. Its early weeks and months, at least, were marked by bitterness and by a certain amount of violence. But FEC kept operating, using supervisory personnel and making new hires. After a while, the strikers began drifting back to work and as many as 900 of the 1,600 strikers may have rejoined the railroad. Many of the others have long-since taken other jobs; some, no doubt, are over-age or physically disqualified from returning—and so it is questionable how many of those "special" positions will be filled.

At almost every turn, FEC bucked political pressures—local, state and Federal—to settle. It kept operating. In the end, it may have been a problem that could not have been foreseen that led to the agreement with the non-ops. As FEC put it, "While the strike has not seriously affected the operation of the railroad, the legal maneuvering of the unions and the government has prevented management from giving its non-operating employees badly-needed wage increases." That factor hurt the employees; it also hurt FEC, because job turnover was high.

Further court proceedings will be necessary in the non-op case, and FEC still has problems with the ops. But the worst may be over.



New bridge helps rail and water traffic

Both rail and water transportation are benefitting from construction of a new bridge carrying Burlington Northern across the Snake River near Pasco, Wash. The $6-million structure replaces one that had served Northern Pacific and later BN since 1883. The old bridge, however, had restrictive load limits for rail traffic and provided only a narrow passage for waterways traffic. Replacement of the old structure was necessitated by diversion of heavier traffic onto the bridge line when a 40-mile stretch of unrestricted track along the Snake was condemned in connection with dam building.

Lines on Labor

GUS WELTY

'72 GOAL: MAKING SENSE OUT OF DOLLARS

There has long been a suspicion that the average guy who works for a railroad has a less-than-perfect understanding of what makes his company tick—and of what happens to all those dollars that the railroad takes in. "Suspicion verified," you might say, after studying the results of economic opinion surveys taken by Illinois Central of its union and exempt-and-managerial employees. Survey results, in short, point to a communications gap—one which IC will try to close. Survey results, however, also make you wonder about the economic opinions held by employees elsewhere in the industry—because IC has been a leader in getting the straight dope to its people.

WHERE THE DOLLARS GO: FACTS AND "FACTS"

Rate-of-return for the industry in 1970 was 1.47%, for IC 2.60%. But when union employees were asked what they believed rate-of-return to be, replies averaged out at 8% for the industry and 9% for IC. Exempt employees came a little closer to the facts. Their consensus: 5% for the industry, 5.1% for IC. And what did IC's people believe a *fair* return would be? Exempt employees estimated it at 11.7%. Union employees were even more generous: 13%, they said.

Again on an average basis, both union and non-union people overestimated the percentage of each net dollar devoted to capital improvements while they underestimated the share paid out in dividends (and maybe that expression of union opinion is a little surprising, since the union press is so fond of talking of "fat profits" and "fat dividends").

IC then asked what its employees figured as a fair split of the dollars left after expenses. Non-union consensus: 59 cents per dollar for employee compensation, 41 cents to profit. Union consensus: Make the split 61-39. Finally, IC asked for fair-split opinion as between employee compensation and dividends, after payment of expenses and a set-aside of capital funds. Non-union consensus: 66 cents for wages and benefits, 34 cents for dividends. Union consensus: Make it 65-35. And what were the facts as to the *actual* split in 1970? Well, in the first instance—dividing the dollar between compensation, and profit—the actual was 88.8 cents for compensation, 11.2 cents for profit. And on the second measure—compensation and dividends—the actual was 94.5 cents and 5.5 cents. There was a reasonable correlation on both questions between what employees thought to be fair, and what they estimated to be the facts regarding IC. But both their opinion and their estimate were far off-target.

GETTING THE FACTS ACROSS: CAN IT BE DONE?

IC has made a good start on setting things straight, with distribution of a graphic report on the dollar, where it comes from and where it goes. Coming up will be extensive use of an employee-report, published on a regular basis to provide information on matters of direct economic interest to employees of the road. Based on a review of what IC has come out with thus far, it's safe to say that the employee who takes time to read will know a lot more about his job than the fellow who just can't be bothered to keep himself informed.

Three agencies get new transit grants

Christmas came a little late for tens of thousands of Chicago-area commuters—but $85 million is welcome anytime, and that was the approximate total of new Federal grants to three Chicagoland urban mass transportation agencies. The breakdown: For Chicago Transit Authority, more than $53.1 million; for the West Suburban Mass Transit District, more than $24.2 million; and for the Lake-Porter County (Indiana) Transportation & Planning Commission, almost $6.9 million.

The total was not all that had been asked for. CTA, for example, had filed application for $81 million. But the grants, together with one-third local and state matching funds, will enable CTA to get a good start on its first-step improvement program, which involves expenditures of more than $121 million. And they will permit modernization, with new equipment, of Burnlington Northern and Chicago South Shore & South Bend commuter operations.

With hopes of getting the full $121 million funded, CTA is spreading its initial program over two fiscal years, 1972 and 1973. Acquisition of 1,000 new buses will apparently be split, 500 each year. But plans are moving ahead for acquisition under the 1972 budget of all 100 rapid-transit cars which were in CTA's original proposal. Station improvements will also get priority status, though some track improvements may be deferred into fiscal '73. State aid and a local CTA contribution will provide the required one-third local match, with state aid estimated at $20.4 million and the local contribution at about $5.9 million.

The grant to WSMTD, along with state and local funds, will be used for acquisition and modernization of BN's existing fleet and for purchase of 25 new bi-level cars. The grant to the Lake-Porter County organization, supplemented by a one-third match by South Shore, is expected to cover acquisition of 21 new cars and improvements to CSS&SB's line and electric-power facilities.

1972 rail-transit tour

Railway Age will sponsor a Rail-Transit Seminar Tour visiting Munich, Vienna, Budapest, Leningrad, Hamburg, Brussels and Paris May 13-31, 1972. Inquiries should be directed to the editor.

Auto-Train and General Electric locomotives ...one great idea deserves another.

Relaxed and rarin' to go!

That's the idea behind Auto-Train which ferries families and their cars between Washington, D.C. and Sanford, Florida. There, having escaped the fatigue and hazards of a long drive, the family is within close driving distance of new Disney World and other popular Sunshine State vacation spots.

An innovative idea like Auto-Train deserves an equally innovative type of motive power. Thus, a foresighted management chose General Electric locomotives.

Generating new reliability, power, and economy, these locomotives are perfectly in tune with innovative railway concepts like high-speed manifest operations, the unit train, advanced commuter service . . . and now, Auto-Train.

At General Electric, we firmly believe one great idea deserves another.

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How? By his signing up for a one year study course to update his shop craft skills. Courses available include:

1-Year Skill Improvement Program for CARMEN: safety, car details, inspection, interchange rules;

1-Year Skill Improvement Program for MACHINISTS: locomotive inspection, wheels, air brake equipment, locomotive maintenance;

1-Year Skill Improvement Program for ELECTRICIANS: wiring diagrams, electronics, locomotive electrical maintenance.

Cost is $6.00 per month for twelve months ($72.00 total). Two lessons are sent each month. We send a progress report to the railroad on request. Upon satisfactory completion of the course, a diploma is issued.

Many other training programs are available and can be tailored to meet particular needs. Coupon will bring information.

Pass this along to someone you'd like to help...

RAILWAY EDUCATIONAL BUREAU
1809 Capitol Avenue, Omaha, Nebraska 68102

☐ Please enroll me in the _____ course. Here is my check for $6.00. I will pay $6.00 per month until the course has been completed ($72.00 total). I understand I may cancel at any time.

☐ Please send me more information on the _____ course.
☐ Please tell me what other training programs are available.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

RAILROAD _____

JOB OR TITLE _____

RAILWAY EDUCATIONAL BUREAU

IC/GM&O approved —with conditions

Aside from Louisville & Nashville/Monon, 1971 was not much of a year for railroad mergers—until, that is, the last week of '71, when the ICC gave a conditional approval to Illinois Central/Gulf, Mobile & Ohio. Merger would create a new railroad, Illinois Central Gulf Railroad Company, which would be a wholly-owned subsidiary of Illinois Central Industries. ICG would be a 9,400-mile system made up of two essentially parallel roads.

In approving ICG, however, the Commission attached a major condition—that Union Pacific and trustees of UP stock trusts divest themselves of IC Industries stock within 10 years, and that certain restrictions be placed on the disposition of this stock. Neither ICI nor UP had immediate comment on the order—though ICI and IC Chairman William B. Johnson and GM&O President Glen P. Brock did say they hope the conditions will not cause a delay in putting the two roads together.

The full Commission thus did what its examiner did not do—consider the UP-control issue—in approving IC/GM&O. Missouri Pacific and Chicago & North Western had raised the question of UP relationships to ICI, but Examiner Hyman J. Blond contended that such a study would make chances of quick action on merger "remote or nonexistent."

The Commission agreed that merger should be expedited, and indicated that IC/GM&O would not be held up pending an examination. But, the ICC said, an investigation will be made and various reports will be required from those connected with UP and related-interest involvement with ICI.

Bankruptcy trustees named for Reading

Federal District Court Judge J. William Ditter, Jr., has appointed Richardson Dilworth and Andrew L. Lewis, Jr., as trustees in bankruptcy for the Reading Co. Ex-Philadelphia Mayor Dilworth, 73, recently retired as president of the Philadelphia Board of Education. Lewis, 40, is president and chief executive officer of Snelling and Snelling, Inc., a production franchise business, and former head of Simplex Wire & Cable Co. Pending their confirmation by the ICC, the trustees-designate were meeting with Reading President Charles E. Bertrand to discuss continued operation of the railroad.

Watching Washington

DOT'S YEAR-ENDER

REID BEDDOW

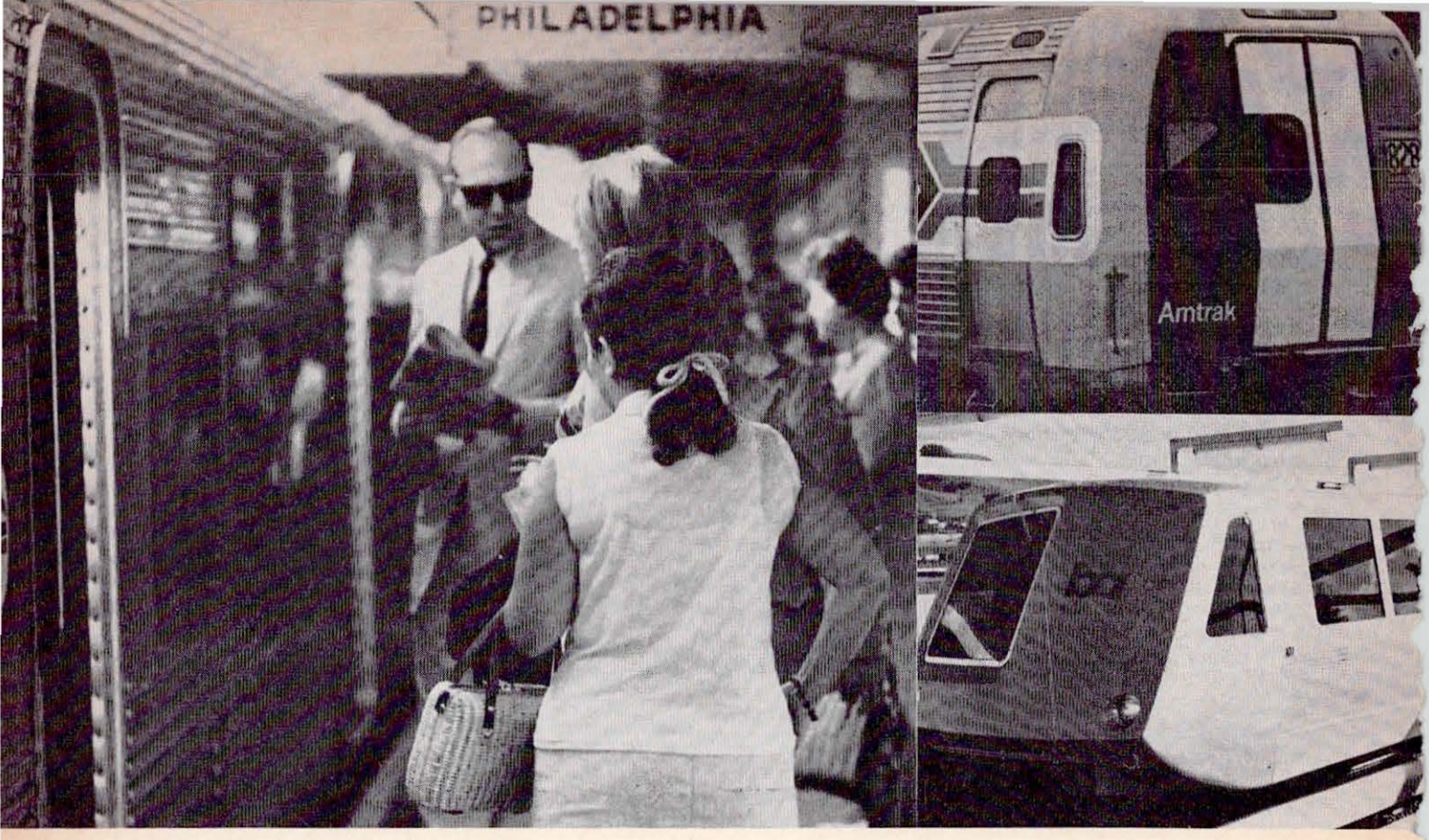
DOT Secretary John A. Volpe's news conference Dec. 30 was more of a year-end summary of DOT accomplishments in 1971 than a purveyal of new developments, especially where rails were concerned. As usual, rails rode backseat to highway safety, aviation, and freeway construction. "I regret not having more time to dwell on the establishment of Amtrak . . . and development of new legislation—the Transportation Assistance Act of 1971 and the Regulatory Modernization Act of 1971," said Secretary Volpe. The oblique reference to Senate bills 2841 and 2842 (RA, Nov. 29, p. 14), which propose creation of a $3-billion Federal rail equipment obligation insurance fund and a $35-million national freight car control system, as well as loosening up ICC control of rail rates, was taken by most observers to mean that DOT would not sell the proposals to Congress with any great zeal.

ROADWAY REHABILITATION

One item not included in the Administration rail aid package was a proposal for a roadway trust fund financed by a 2% surcharge on waybills, with matching funds from rails. Rail opposition killed the proposal because the roads most in need of aid for track improvements were, like PC, bankrupt or, at best, marginal. "It was a Robin Hood plan," says an ARR analyst, "robbing the rich to give to the poor." Now, it has been learned, a new plan for roadway aid is about to be floated. National Association of Railroad Passengers Chairman Anthony Haswell has drafted legislation for circulation among interested parties. Haswell's plan, which will take priority among NARP's legislative goals ("Amtrak won't get anywhere without roadway improvement," asserts Haswell), would involve Federal assumption of property taxes on roadway (about $175-million annually) plus a grant from the Treasury's general fund of $200 million to $300 million annually for two years. The property tax monies saved by rails, estimated at 15% of net earnings by Haswell, would be paid into a Roadway Rehabilitation Fund administered by the DOT Secretary, the exact amount determined by a flat assessment on individual roads.

MACHINE-TOOL ORDERS MOVE UP

One of the basic business indicators—the machine tool industry—has provided fresh evidence of a gradual business recovery. Orders placed with the machine tool industry during November 1971 totaled $79,350,000, up 20% from the October figure, according to the National Machine Tool Builders' Association. The orders were 103% higher than those reported for the comparable 1970 month. Total industry orders through the first 11 months of 1971 reached $770,900,000, off 9% from the 1970 period. Order backlog at the end of November was $583,000,000, compared with $573,000,000 at the end of November 1970.



MOVING PEOPLE

"The brand new trains appearing today are not nostalgia trips"

By JOE ASHER

Remember the aspirin commercials of a few years back? You can color the aspirin, buff it, fizz it, or break it up in a powder, but nothing beats those plain little old white tablets for ordinary headaches.

Something like the same should be said about moving people. You can put people in their own vehicles, change the shape or the power pack of the vehicles, whizz them in the air if you please. But nothing seems to work for moving masses of people over short and medium distances like railroads and rapid transit.

The proof is the events of the past decade. First came the big transit revival. Then the Northeast Corridor demonstration. After that, Amtrak, and most recently, Auto-Train.

Meanwhile, the Japanese were showing the world that high-speed trains are the *new* wrinkle, not a retread of an old one. The Japanese success spawned imitators from Germany to France to Britain to Canada. If any more proof were needed that modern high-speed trains are out of the test-tube stage, the Japanese have supplied it: They are going ahead with New Tokaido-type lines for their entire country.

● **The second Age of Railroading.** Needless to say, this amounts to a whole new lease of life for trains as movers of people. It may surprise some, but it really should not. The late Louis Armand, a philosopher and scientist no less than a railway man, used to say that the second Age of Railroading would come late in the Twentieth Century for two reasons. Both have to do with the advent of electronics and the computer.

The first reason is the principle of *guiding:* No vehicle lends itself to controlled movement as well as a train. The second reason is the principle of *modularity:* No vehicle type is so well adapted to easy add-ons or subtractions of vehicle units as a train.

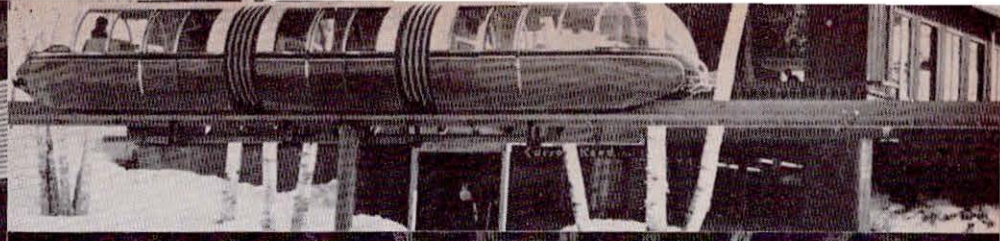
So the brand new trains appearing today are not freaks. Neither are they nostalgia trips for sentimental oldsters. They were the prime people-movers once; it's becoming clearer that they can be prime people-movers again.

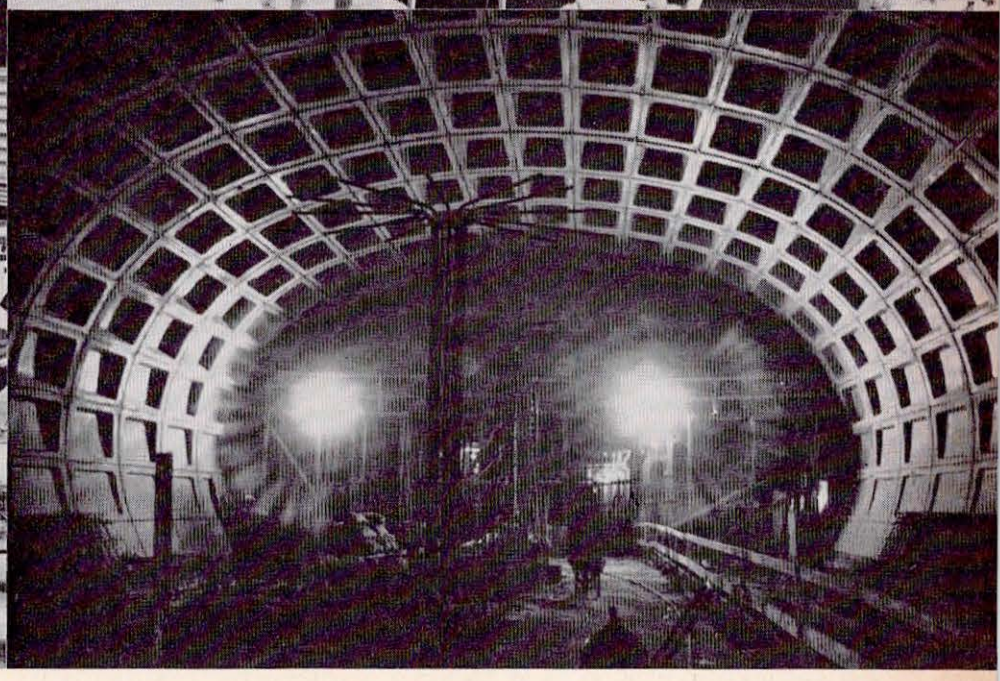
● **Destiny vs trends.** Like the case of the aspirin tablet, it isn't for want of trying alternative solutions. America, after all, had a love affair with the automobile for years. Given what Lewis Mumford calls the American weakness for mistaking trends for destiny, the automobile was supposed to have replaced the train as a people-mover for good.

That was the Gospel According to the Bureau of Public Roads. It was the Revelation handed down by the Elders of Detroit. Everyone knows how their argument goes: People want the freedom to go where they want, when they want, and nothing provides that freedom like the automobile.

It was a persuasive argument, and America was soon persuaded. Only pretty soon, the highways weren't dotting the landscape—they *were* the landscape. And one didn't drive to town any more: the town was getting cemented over by freeways and spaghetti-bowl cloverleaf intersections.

That sparked the transit revival. If





the revival has been slow coming, it's because so many people still hope to buff or fizz their way to a cure for the people-moving problem.

Take the glamor solution of ten years ago: Monorails. In the end, monorails did prove their value, only not for moving high densities of people, and not for moving people long distances.

Or take the glamor solution of five years ago: Vertical take-off and landing craft. These were the choppers that were going to revolutionize short- and medium-distance travel, as for example, between New York and Washington. But the economics were fuzzy. The thought of dozens of V/TOL craft hovering over high office buildings frightened people. And the actual carrying capacity of the vehicles never really engaged the problem V/TOL was supposed to solve.

The glamor solution of today for medium-distance travel is the airbus. It has some promising aspects; it also has defects. Building the kind of traffic the airbuses need to be viable is a sure recipe for traffic jams at both ends: The problem doesn't get solved; it simply gets shoved elsewhere.

Furthermore, development of the airbus means airports will continue to gobble up valuable real estate in areas of high urban concentration—something almost every city in the country is bitterly resisting.

There are other exotic solutions making the rounds. These days, it's "people-movers"—unconventional, electronically controlled vehicles, some with taxi-like aspects, geared for low to medium speeds, and short distances.

Like the airbus, this new breed of people-movers may have its uses. But they do not engage the problem of moving really large numbers of people.

● **Down to earth.** So the buffing and the fizzing go on, and the trend back to the plain white tablet takes time. But the trend is there. Consider, for example, the extent to which the highwaymen who were going to cement over America are on the run:

—Worldwide oil shortages guarantee that the age of cheap gas to run your car anywhere and everywhere is over.

—The environmentalists who spearheaded the attack on the polluting automobile engine have broadened the front. Groups like the Sierra Club are fighting to widen uses of the hitherto sacrosanct Highway Trust Fund—for transit, among other things.

—The concept of balanced transportation has finally made some headway. One big oil company in California supported Bay Area Rapid Transit; five in New York supported Gov. Rockefeller's highway-plus-transit bond issue (although it lost).

—Highway men who until now ignored the value of express busways have suddenly undergone a magic conversion and begun to extol their virtues. The obvious ploy is to meet mass transit halfway, or seem to: Rising public complaints about the inadequacy of roads for moving large numbers of people are neatly soothed away; the small public revenues for mass transit are partly siphoned over to roads; and the gigantic public revenues for roads stay with the roads.

● **Detroit on the defensive.** So the Insolent Chariots of Detroit (again Mumford's phrase) are definitely on the defensive. Nobody is saying that the automobile is about to shrivel up and disappear from the scene. But it is time to note that rails are again justifying themselves as people-movers.

Transit is where it is most noticeable right now. A quick look around the country shows the following:

—The New York City Transit Authority is building a new Second Ave. subway, adding around 300 new cars a year, and studying plans for new crosstown lines in mid-Manhattan.

—Port Authority Trans-Hudson Corp. (PATH) is expecting 46 new cars, continuing work on its $80 million transportation center in Jersey City, extending automation of turnstiles and communications, and studying an extension to Newark Airport.

—Massachusetts Bay Transportation Authority opened its South Shore line, received 76 new cars, is laying plans for another 14 miles of extensions, and shopping for 77 more rapid transit cars

and 200 streetcars, in coming months.

—Southeastern Pennsylvania Transportation Authority ordered 144 new cars for Penn Central and Reading commuter lines, and is negotiating to take over their actual operation.

—The Delaware River Port Authority's PATCO line is studying extensions to Atlantic City and other points.

—The Chicago Transit Authority is busy with plans for a Loop subway to replace the present antiquated El.

—North of the border, Montreal Transportation Commission is embarked on a $430-million, eight-year program to build another 14 miles of line, and add 300 more cars. The Toronto Transit Commission is adding five miles of new line, received 76 new cars, and is overhauling—not replacing—its streetcar fleet.

● **New systems coming in.** So much for existing systems. What should really catch the eye is how new cities are coming into the transit column: Washington, Atlanta, San Francisco, Buffalo, Baltimore and perhaps Pittsburgh.

Bay Area Rapid Transit, in so many ways the showcase of all that's new and sexy about mass transit, is set to open this year. The opening date was put off several times—nothing strange for a project of $1 billion-plus magnitude. Only now the carbuilder, Rohr Corp., has been struck, and it looks like the opening date, once set for March, will be put off again, probably to early summer.

In some quarters there has been anxiety that something is wrong at BART. Stories of operating test troubles have made their way around the country. David G. Hammond, BART's assistant general manager for operations and engineering, is concerned to lay those rumors to rest:

"There **have** been troubles. The two main things have been (1) quality control in workmanship, for example connecting a red wire to a black terminal; and (2) getting the system together and operational. The shakedowns we had gave us the opportunity to work this out. As far as the cars are concerned, we are out of the woods. As for the automatic fare collection system, there are no current problems. With the automatic train operation, it's different: There's the problem of putting it together with the wayside controls and central control. We have no doubt the system is going to work. The only doubt is the amount of time it takes."

So late opening or not, look for BART to be the transit showcase it was always cracked up to be.

The big news on the Washington Metro is that a stumbling block in a Congressional subcommittee was cleared out in December with Administration support. This released $72 million in construction funding, and led to matching Federal and local commitments of $300 million, bringing the total earmarked so far to $887 million of the eventual $2 billion-plus cost. Washington Metropolitan Transit Authority officials expect to be ready to take bids on 300 cars this March.

Atlanta's last transit referendum was a mixture of victory and defeat: Two of the four counties opted for transit; two didn't. Even so, construction plans will go forward right away.

Other cities with active plans for transit are Buffalo and Pittsburgh. In Los Angeles, where a transit referendum was turned down, officials have proposed a truncated system, mainly serving the airport-to-downtown traffic.

What should be made of all these plans? That transit is making its way slowly, with constant financial difficulty, but nevertheless making its way.

Beyond that, the transit revival is doing something else. The new systems and renovated older ones are slowly accustoming the public to the idea that

Glamor solutions for moving people come and go . . . and go . . . and go . . .

riding in a rail vehicle does not have to be a trip down Memory Lane.

● **The meaning for railroads.** That has consequences for railroads as people-movers over short to medium distances. The man who rides an air-conditioned, comfortable transit car to work every morning eventually starts wondering why he can't do the same, going to a city 200 or 300 miles away on business. It's a thought bound to strike him when he's caught in a holding pattern over the airport, or stuck in a traffic jam on his way in from the airport.

The Northeast Corridor program was meant to show that this kind of vague demand can be converted into visible payload. That's exactly what it did. In Japan, the New Tokaido Line cut so deeply into air traffic between Tokyo and Osaka that the three airlines flying the route merged to form a pool service. The Northeast Corridor, with far less comprehensive changes than the Japanese in point of speed and service, accomplished much the same thing: Eastern Airlines curtailed the number of its shuttle flights and raised the prices sharply.

That alone should make Amtrak and Auto-Train promising possibilities. But there's more: demographics. The population experts and geographers have been saying for years that the country is running out of space to put the new people on, and real estate to chop up for still more new highways. Railroads, as nobody needs to be told anymore, have far and away the best capacity for moving large numbers of people: upwards of 40,000 of them an hour, as compared with perhaps 6,000 on the highway. That makes them far and away the best users of space around. (express busways don't come close).

● **The environmentalists.** And then there's the new environmentalism. Probably the first man to spot this as a *railroad* issue was Otto Zimmerman, Illinois Central operating vice president. A diesel-hauled train emits far fewer impurities, he noted, than a fleet of trucks carrying the same amount of cargo. Carrying Zimmerman's point a step further, an electric-powered train carrying passengers emits no impurities at all.

So the power of the environmentalists as potential allies should not be underestimated. It was a single private citizen, after all, Ralph Nader, who fought Detroit to a standstill, not some coalition of pressure groups. The electric and gas companies know the environmentalists' clout, too.

The two big problems that remain are negativism in the railroad industry itself and finance. The negativism is easy to understand: Losses on rail passenger service ran into the hundreds of millions of dollars, largely as a result of public policies that favored every mode of transport but the railroads.

● **Will the public pay?** Directly linked with that is the matter of finance. Transportation economics and law being the morass they are, it was a simple matter for competing modes to claim that they were profitable or at any rate self-supporting—if outside subsidies were not counted. These days the body of opinion is growing that public policy needs to be more even-handed. If this continues to grow—and every President since Eisenhower has called for it—there is legitimate reason to believe that public money can and will be found to support rail passenger service, where a *demand demonstrably exists.*

Only a tiny segment of the population wants transcontinental passenger trains, for example. But the Northeast Corridor and recent experience overseas strongly suggest that shorter hauls between good-sized urban centers would be well patronized.

A popular phrase asks: "If we can put a man on the moon, why can't we find a convenient way to get across town?" To that should be added this: If we don't find a convenient way to get from A to B without chewing up the landscape and filling the air with poisons, we may all have to move to the moon, and soon. ■

Rail transit/commuter car market at a glance

These new car orders are likely in 1972:

For service on...	No. of cars	Type	Purchaser	Builder
Bay Area Rapid Transit	200	Rapid Transit	BART	
Burlington Northern	25	Commuter	West Suburban Mass Transit District	
Chicago South Shore & South Bend	34	Commuter	Lake-Porter Co. Trans/Planning Div.	
Chicago Transit Authority	100	Rapid Transit	CTA	
Erie Lackawanna*	200	Commuter	New Jersey DOT	
Illinois Central	15	Commuter	Chicago South Suburban Mass Transit District	
MBTA (Boston)	77	Rapid Transit	Mass. Bay Transportation Authority	
MBTA (Boston)	200	Street Cars	Mass. Bay Transportation Authority	
Milwaukee Road	36	Commuter	N.W. Suburban Mass Transit District	
N.Y. City Transit Authority	300	Rapid Transit	Metropolitan Transportation Authority	
Philadelphia Transit Commission	140	Street Cars	Southeastern Penna. Transportation Authority	
San Francisco Municipal Railway	78	Street Cars	S.F. Public Utilities Commission	
Washington Metro	300	Rapid Transit	Washington Metropolitan Area Transportation Authority	

These new cars were delivered in 1971:

For service on...	No. of cars	Type	Purchaser	Builder
Cleveland Transit System	2	Rapid Transit	CTS	Pullman-Standard
Erie Lackawanna	85	Commuter	New Jersey DOT	Pullman-Standard
Illinois Central	34	Commuter	Chicago South Suburban Mass Transit District	St. Louis Car
Long Island	120	Commuter	Metropolitan Transportation Authority	Budd
MBTA (Boston)	76	Rapid Transit	Mass. Bay Transportation Authority	Pullman-Standard
NYCTA (New York)	8	Rapid Transit	MTA	St. Louis Car
Penn Central (Harlem & Hudson)	80	Commuter	MTA	General Electric
Toronto Transit Commission	76	Rapid Transit	TTC	Hawker-Siddeley

Work goes forward on this undelivered backlog:

For service on...	No. of cars	Type	Purchaser	Builder
Bay Area Rapid Transit	240	Rapid Transit	BART	Rohr
Illinois Central	96	Commuter	Chicago South Suburban Mass Transit District	St. Louis Car
Long Island	158	Commuter	MTA	General Electric
N.Y.C. Transit Authority	292	Rapid Transit	MTA	St. Louis Car
PATH	46	Rapid Transit	PATH	Hawker-Siddeley
Penn Central (Hudson & Harlem)	48	Commuter	MTA	General Electric
Penn Central (New Haven)	144	Commuter	MTA/Connecticut Trans. Authority	General Electric
Penn Central (New Jersey)	70	Commuter	New Jersey DOT	General Electric
Penn Central (Philadelphia)**	130	Commuter	SEPTA	General Electric
Reading (Philadelphia)**	14	Commuter	SEPTA	General Electric
Staten Island Rapid Transit	52	Rapid Transit	MTA	St. Louis Car

The long-range outlook:

For service on...	No. of cars	Type	Purchaser	Builder
Chicago Transit Authority	450	Rapid Transit	CTA	
Jersey Central	60	Commuter	New Jersey DOT	
Milwaukee Road	10	Commuter	N.W. Suburban and North Line Mass Transit Districts	
Montreal Transportation Commission	300	Rapid Transit	MTC	
N.Y.C. Transit Authority (1973-78)	1,500	Rapid Transit	MTA	
N.Y. & Long Branch	90	Commuter	New Jersey DOT	
Penn Central/Reading (Philadelphia)	20	Commuter	SEPTA	
Philadelphia Transit Commission	130	Rapid Transit	SEPTA	
Rock Island	50	Commuter	(Agency to be established)	
Washington Metro	256	Rapid Transit	WMATA	

**New Jersey DOT reviewing plans.*
***Subject to appeal in a court case.*

Inaugural train ready to leave Lorton, Va.

Breakfast in buffet car was followed by movie for kids.

Nightclub car becomes

Auto-Train: "We could fill four if

The skeptics said the public would never pay $10 for a share of a brand new passenger-train business—but last summer the public gobbled up 700,000 shares of Auto-Train in hours.

Then the skeptics said Auto-Train would never get its sideshow on the road—but Auto-Train did, on Dec. 6 (RA, Dec. 13, p. 24). The price of a share passed 20.

Last week the skeptics were less vocal but still there. Unimpressed by the fact that the stock zoomed to 40 early in January (it closed at 39½ on Jan. 4), they pointed out, accurately, that the price of a glamor stock has no necessary relationship to the soundness of the venture. And they continued to ask: Isn't the costing faulty? Isn't the service underpriced?

Railway Age took the questions to Auto-Train President Eugene Garfield.

Q. Mr. Garfield, has Auto-Train lived up to your expectations so far?

A. The demand for the service is overwhelming. It is far exceeding any estimate or any expectation not only that I planned for but dreamed of. We could fill four trains today if we had the equipment. We are running seven sleepers; we had figured two would be sufficient. Pending delivery of all of our own equipment from Pullman-Standard, which should be late in January, we have had to lease equipment. We have leased coaches. We have leased 15 semi-enclosed auto carriers from the Southern.

Q. Are you getting good reactions from those who have made the trip? Will they do it again?

A. By and large, yes. When I say by and large, I qualify it to our own equipment. Those passengers who have used our dome coaches, who have been in our nightclub car, who have used our buffet car — those passengers thought the service was remarkable. And when we have used a full complement of our own auto carriers, the cars have been loaded faster than the passengers could board the train; and unloading has been faster than we really expected. Our average loading and unloading time is about 1 minute and 22 seconds for one level of our bi-level auto-carrier.

Q. Your schedule calls for departure from Lorton, Va., at 8 p.m. and arrival at Sanford, Fla., at 11 a.m. How is your on-time record?

A. Because we have had to lease auto carriers that are unlike our own, we have experienced some delay in departure and some late arrivals. On one or two occasions we have been as much as 2½ hours late. However, with our own equipment we were arriving earlier rather than later.

Our decision to use leased equipment was a risk that we took in order to accommodate the tremendous response—it was a choice of either not being able to transport the passengers and their autos, or transporting them on a longer schedule than anticipated. When you see the expressions on the faces of the people when they arrive, when they get off the train and their car is brought to them, and they go driving off either at Lorton or at Sanford, then that decision was a good one.

Q. The skeptics are saying that you will find it hard to make money at the prices you are charging—$190 for an auto and four passengers, with meals thrown in; and $40 for a double bedroom. Are you, in fact, making money?

A. Let me rephrase the question: *Will* we make money? Yes, we will. That is why we are in business. That is why we were able to raise the money that we did. That is why we have not gone to the government for any funds. That is why the Continental Bank of Illinois gave us a line of credit for $2.5 million. For so long our concept was such a high risk in the bankers' eyes that it needed so-called venture capital to get started. Today we are in the very comfortable position of being a very bankable company. And that is predicated upon the reservations we have taken and even more important, the reservations that have been paid for.

Q. You said earlier that you could break even with an average occupancy rate of around 45%. What is your occupancy rate?

A. At least 95% southbound; it has been as high as 75% northbound, but now that the holidays are over the northbound figure will probably level out at around 60% to 65%. I would still put our break-even point at around 45% or 47%.

Q. You are satisfied with your original costing?

A. Yes. In some respects our costs are lower than we had expected; we have not found any areas where they are really higher. The only area where they are a little higher is in the use of substitute, leased equipment. This is so temporary that on an annual basis it will be a negligible factor.

Railway Age Photographs

rvation car by day.

At Sanford, Auto-Transporters are switched for unloading.

Autos roll down ramp as owners wait just yards away.

we had the equipment"

Q. Your investment today is in the neighborhood of $8.8 million, I believe?
A. Yes. We issued 700,000 shares of common stock to the public at $10 a share. Our net proceeds from that were $6.3 million. We have since then established the $2.5 million line of credit with the Continental Bank.

Q. Are you in the market for more capital?
A. We will be, very quickly. We will need money to get the equipment to meet the demand that we so underestimated.

Q. Will it be equity financing?
A. Probably not; but I don't know the structure yet.

Q. Have you considered running extra sections to take care of the demand?
A. We will probably increase our capacity first by adding equipment to our present one train in each direction, and then perhaps increase the number of trains that we operate. But first things first—and that means getting in all of our original equipment and establishing the highest standards of service on that equipment.

Q. What other markets are you looking at?
A. We have talked about a Cincinnati to Florida run. Some mention has been made of Chicago to Colorado. But we haven't even begun to scratch the potential of the Washington to Florida run.

Q. Do you see the possibility that others will move in on these other markets before you do?
A. There is that danger. But anybody who is interested would have to do all of the things that we did over the last three years. We are so far ahead that if anyone else were interested, it would make sense for them to come to us.

Q. Have you had good cooperation from the railroads?
A. Our relationship with both the Richmond, Fredericksburg & Potomac and the Seaboard Coast Line has been absolutely fantastic. They have been on call for any assistance that we might have required. They have been extremely cooperative and I think it is fair to say that without their extra added interest in our program, we would not have been able to get into service as quickly as we did. We have an agreement with them whereby for use of their right of way and certain maintenance facilities and supplies, we will pay them a fixed fee plus a percentage of our adjusted gross profit.

Q. What problems have you encountered so far? Have you, for example, had any claims arising out of loading or unloading?
A. Not with our own auto carriers. We use passenger trucks. The tie-down system is different. We have our own chocking system which is outstanding; Bill VanDerSluys, manager of passenger car engineering at Pullman, gets the credit for that. He did a magnificent engineering feat and did it quickly.

With the leased cars, we have had some minor dented fenders, but that was to be expected because they were not designed for the type of service we are performing. But with our own cars, the problems have been minimal. The automobiles stay where they are supposed to stay, they don't bounce around, the ride is smooth.

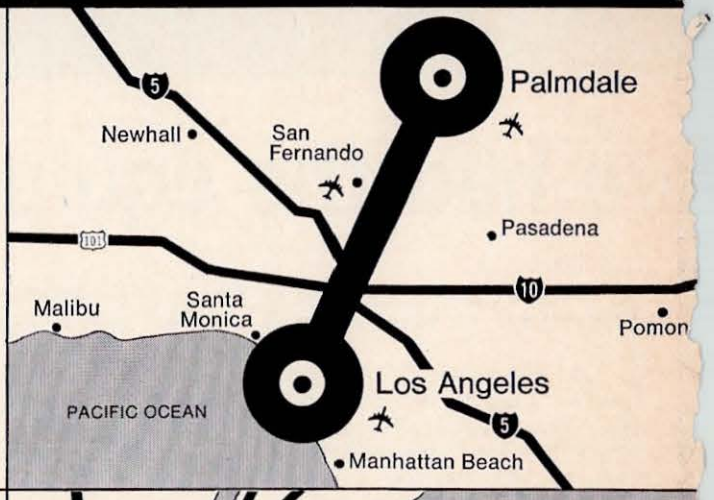
Q. Do you plan any additional changes in equipment design?
A. Our sleeping cars are not what we want to give to the public. We leased six and bought five, from Union Pacific; we bought six from the Santa Fe. What we want to do is take out the door between two bedroms, and make it *really* a bedroom, just as if it were a hotel or a motel room, with twin beds and a shower and an enclosed toilet. This will become a bedroom in fact, with the passenger spending most of his time in the buffet car, or seeing movies, or in a nightclub car, and then going to the room to sleep. Bill VanDerSluys again has done some preliminary drawings which he is to be tremendously complimented on. He is going to revolutionize the new passenger equipment in this country; he is going to set the pace.

Q. Then you are pleased with the refurbishing and redesign work?
A. General Electric [supplier of five Auto-Train locomotives] and Pullman have done outstanding jobs as have all of the manufacturers. [Coach & Car supplied seats; Dresser Industries, couplers; Timken, roller bearings; Adams & Westlake, windows; U.S. Steel, wheels and axles; Vapor, chemical toilets and steam trainlines; Sherwin Williams, paint, among other component suppliers. L. B. Foster's Fast-Trak steel-tie track panels were installed at the terminals. Terminal facilities were

(Continued on page 43)

Commuter problems

High-speed transportation for inter-city and airport access.



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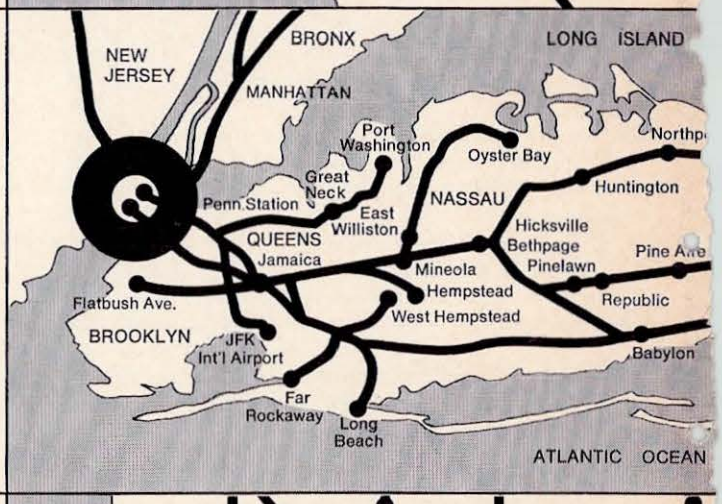

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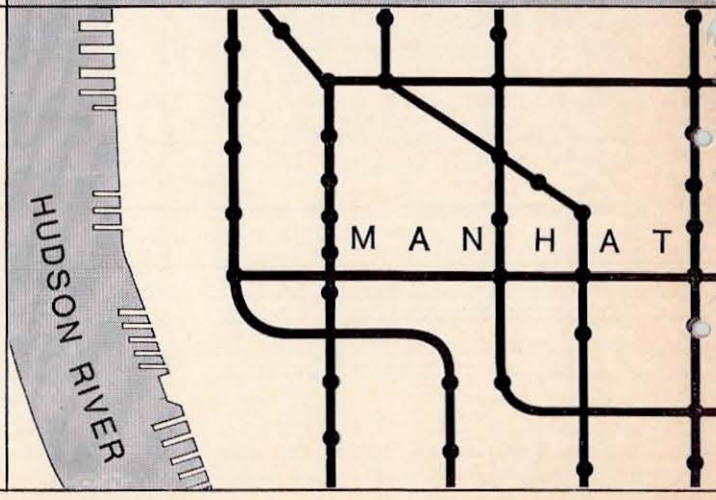

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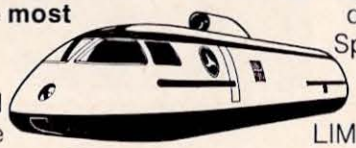

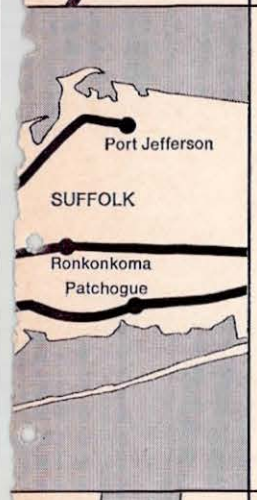

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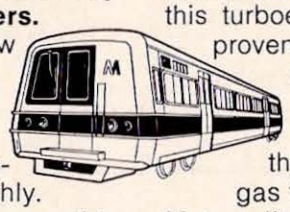

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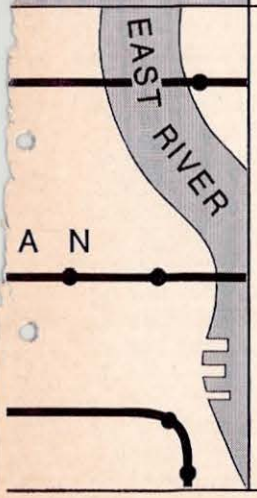

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A smoother track ahead for Amtrak?

Amtrak President Roger Lewis was recently quoted as saying that the U.S. has "just about the worst passenger-train service in the civilized world right now." Railway Age went to Amtrak's marketing vice president, Harold Graham (former marketing chief for Pan American World Airways), to find out what the corporation plans to do to correct this in 1972. Graham covered a wide range of topics in the taped interview.

"We still have the basic problem of getting people to try the product."

Harold Graham, VP, Marketing

Equipment: "In 1972 we will be renewing the interiors of many of the cars . . . All of the major shops in the U.S. are involved in reworking the cars we have purchased. The major shops are doing heavy maintenance work which was deferred by the railroads at a time when they were unsure which cars, and how many, would be purchased. A great deal of work must be done to bring the cars up to Amtrak standards."

New services: "I would like very much to see us put back the trans-border services—the connection into Mexico, the one to Vancouver, the one to Montreal and perhaps one to mid-Canada: there are many Canadians who would like to come down by rail. I think there is a very good Canada-to-Florida market."

Auto-ferry: "We have proposals on the drawing board for such operations. The same study which originally developed the Auto-Train concept, done by the FRA, also took a look at some other areas. We think there is a potential. One of the problems which has to be resolved is how seasonal is this traffic, and how directional. Whatever we do, we'll do ourselves—not through Auto-Train."

Pricing experiments: "We have a lot of things that we would like to do. They are going to be tied into various equipment situations. They will probably be firm by the end of January. As for the Boston-New York incentive fare that went in Dec. 1, it's hard to tell how much of the 'up' is due to the new fare and how much is due to the added services we put on. We changed the equipment, we changed the food services, we added diners, we added frequencies. All of this has an impact on traffic and it's extremely hard to isolate the $9.90 fare at this time. It will be at least 90 days before we will be in a position, with the normal lag in reporting times, to evaluate exactly the effect of the fare."

Metroliners: "We have increased the frequencies and we have gotten a better spread on schedules. Metroliners have increased in the range of 25% to 30% a month from the same month last year for the past few months. And for the first time the total service between New York and Washington, including the conventional trains, has shown an upward trend in the last two months instead of what has been the historic downward trend in '68 and '69. We are making the public aware of the new schedules and the public acceptance is very high."

Advertising: "Our 1972 budget will be larger than the budget which we had in 1971, which was close to $3 million. Advertising is very necessary —because we still have the basic problem of getting people to try the product. When you have had, say, 20 years of people deprecating a product, the major problem is to get them to try it once to see if it's better, or as bad as they have heard it is." [Asked to comment on the complaints of airlines and bus companies about expenditure of what they call government money to advertise against them, Graham replied: "This gets to be very glass-housish."]

Public reaction: "We are getting probably a minimum of 500 letters a week, and lots of them are talking about how much they appreciate the changes that are taking place—particularly the changes in the attitude of the personnel. The thing that makes me feel best is the change in the personnel attitude, because it appears that the employees are grasping this opportunity to expand their own job potentials. Over-all, the letters reflect a sharply changed public attitude. The bringing in of western equipment and equipment from the Seaboard Coast Line here in the East has had a really rapid effect."

Press reaction: "I am not discouraged by bad publicity, because I think there is an American failing that we expect the application of an idea to have instantaneous results. I think there was a general public expectation that when you put together a new corporation, and it started on May 1, that automatically made everything all right."

Railroad cooperation: "That has ranges of color. Obviously there are some people who just do not believe in the Amtrak concept of operation at all. There are others who think there is a good potential and who would like to see us give it a good run, and we are getting very good cooperation at the working levels without too much trouble at all."

Labor cooperation: "I think they are going to be flexible as they see the eventual expansion of rail passenger services; they will see that it is in their own best interests to make this succeed. I think we will see a better atmosphere of working together to try and resolve the problems. I don't see an adversary relationship in this—we have a mutual interest."

Terminals: "We have got to get into stations that are sized to the size of the offering we are making—perhaps move into suburban stations."

The future: "This job is a great challenge, and the more time I spend at it the surer I am that railroad passenger service has a very large and important place in America's future. The key word is service. You have to provide the product that the passenger wants. I think that one of the reasons we are getting a good reaction is that passengers are realizing that we care, that we want to know what they want, and that we are trying to give them what they want." ■

Chief engineers are asking:

Will FRA ease its new track standards?

"We won't know, until we finish studies now under way, precisely what the work requirements will be under the FRA Track Safety Standards. We are convinced, however, that they are going to require some important changes in the amounts and kinds of work we do. But I will do my best to comply with the standards within the limits of my budget allowance. If expenditures are required over and above the normal allowance, I don't know where the money is coming from. I am convinced that the standards in some respects go beyond the minimum requirements for safety, and that for other reasons they are unduly burdensome. Therefore, I am hopeful that the FRA can be prevailed upon to make modifications in them."

These opinions and ideas are the expression of all railroad chief engineers in the United States. They are a summary of remarks made by a panel of top engineering officers Dec. 20 before the Maintenance of Way Club of Chicago. The subject: "What the FRA Track Safety Standards Will Mean to My Road."

The speakers included: A. B. Hillman, Jr., chief engineer, Belt Railway of Chicago (moderator); J. A. Barnes, assistant chief engineer-maintenance planning, Chicago & North Western; A.L. Sams, vice president and chief engineer, Illinois Central; and B. J. Worley, vice president-chief engineer, Milwaukee Road.

● **Requirements being studied.** A recurring theme was that railroads are generally not sure what the full implications of the standards will be. At least three of the railroads represented on the panel are analyzing the effect of the standards on their properties. "It will take considerable time in the field to develop what work must be done to comply with the standards," said Worley.

The situation in this respect on the IC, as explained by Sams, is that "we are now in the process of analyzing their effect on our track maintenance, district by district. I think it may take another two or three months to determine their effect on our work."

But already Sams sees a "new ball game insofar as track maintenance is concerned, and I expect to see many changes in our procedures. We will have to find ways of stretching out over a period of years the expenditures to upgrade our tracks to compliance."

● **Are standards final?** While Illinois Central is proceeding on the basis that there must be compliance with the FRA standards, Sams made the point that "we have not conceded that the standards are now in their final form." He continued: "The General Committee of the AAR Engineering Division [of which Sams is Chairman] is still studying the impact of the standards. I feel certain that further objections will be presented to the FRA when these studies are complete." Sams' "personal feeling" is that the standards are "deficient" in three general areas:

"First, many of the standards have no relationship to or are only remotely related to safety. It was the intention of the Congress when the 1970 Railway Safety Act was adopted that the track-maintenance standards would promote safe operation of trains. In some respects the standards go beyond the minimum necessary for safety. To the extent they do so the standards are illegal.

"Second, the benefit-cost ratio has not been developed. The additional cost of compliance with the standards cannot be absorbed by the railroads but must be passed on to the users of transportation services and eventually to the consumers of their products. It would be economically unwise to adopt standards for which the cost exceeds the benefits.

"Third, there has not been enough research conducted to establish a sound relationship between the standards and safety. In my discussions with the representatives of FRA, I have found general agreement on these points. I think the Department of Transportation is making a sincere effort to establish track-maintenance standards which are reasonable and acceptable."

● **Are they recommended practices?** Worley also had pointed remarks to make about the nature of the standards. Saying that, in his opinion, the standards in some areas fall into the category of recommended practices rather than minimum safety standards, he offered the following examples:

"We have not conceded that the standards are in their final form."

A. L. Sams, Illinois Central

Rules should be changed "to more closely relate them to safety."

—B. J. Worley, Milwaukee Road

—"The standards provide that rail with broken bases such as moon breaks be changed-out or speed restricted to 10 mph. On light-tonnage branchlines it seems to me application of joint bars could provide safe operation.

—"The standards provide that vertical split-head rails be changed out regardless of how small the vertical split head may be. Our experience has proved that small split heads need not be changed out on light-tonnage branchlines, but that they should be watched and changed out when the split extends to a point where failure could occur.

—"The standards provide that rails containing bolt-hole cracks must be changed out regardless of size, or the speed reduced to 10 mph. Here again, while it is desirable to remove rails with bolt-hole cracks one inch or two inches long, I do not believe these rails are a safety hazard.

—"The standards require that speed over damaged rail be reduced to 10 mph or fully-bolted joint bars applied, in which case operating speed is res-

BIG PROBLEMS ON BRANCH AND SECONDARY LINES

tricted to 50 mph. I do not think it is necessary to fully bolt joint bars applied to damaged rail.

—"The standards designate maximum variance in rail mismatch for the various classes. In slower-speed territory I do not think that surface mismatch is critical. It can and will affect maintenance, but the limits of mismatch are more of a recommended practice.

—"Paragraph 213.123 (tie plates) requires a certain number of tie plates in Classes 3 through 6. I feel that this requirement comes under the category of recommended practice.

"I feel confident that after the maintenance-of-way people study the rules and make field inspections, an industry effort will be made to change the rules to more closely relate them to safety."

● **Reclassification of tracks.** Sams expects to see a general slowdown of train speeds and he hopes "this can be accomplished without serious adverse effect on the quality of transportation service. I think there are many locations where this can be done without hurting service. An example is reducing freight-train speeds from 45 to 40 mph so that the track will be in Class 3 instead of Class 4."

The North Western may also do some reclassifying of lines, said Barnes, "but we will not do so if it would hurt us competitively to reduce the line to a lower class."

Hillman, whose railroad is basically a terminal line, also sees a possible need for reclassifying certain tracks. "Like a number of other railroads," he said, "we operate our yard tracks under the restricted speed rule which permits a speed of 15 mph, thereby placing our yard tracks in Class 2 (maximum speed 25 mph) and requiring a higher standard of maintenance. Unless we can get the speed classifications changed or the standards eased a bit, we are faced with either considerable upgrading of yard tracks or reducing the speed to 10 mph (the maximum speed for Class 1 track)."

● **Problem: Secondary lines.** Some of the biggest problems in complying with the FRA standards are expected to be encountered on branch and secondary lines. One aspect of these problems was described by Worley:

"The standards provide that speed over fissures, split heads, split webs, piped rail, bolt-hole cracks, head-and-web separations, and broken base rail will be limited to 10 mph until the defective rails are replaced. It is conceivable that as many as 300 to 400 defective rails may be found on a 200-mile-long branchline when tested by a detector car. It takes time to find suitable replacement rail and to replace the defective rail. Obviously, having to operate 10 mph until all defective rails are replaced will be an operating burden.

"The standards provide that vertical split-head rails, regardless of size, be changed out or speed reduced to 10 mph. There are branchlines on some railroads where some rails have small vertical split heads developing at the end of the rails. These rails are watched. When the split heads develop to a certain magnitude they are replaced. A rigid interpretation of the rule could involve large expenditures to remove these rails. In some cases the revenues would not justify continuance of the line.

"The expenditures involved to remove all of the defective rails, rail-end mismatch, and rail-end batter on secondary lines and branchlines will seriously affect the funds available to maintain main trunk lines."

> "I feel confident an industry effort will be made to change the rules to relate them more closely to safety."

There was also indication that, as part of the surveys being made, the need for all tracks is being examined closely, especially where considerable work will be required to comply with the standards.

● **Inspection requirements.** Several speakers indicated that the track-inspection requirements would create problems. Because of the need to file inspection reports, "our inspection procedures will become more critical," said Sams. "This will require additional weed-control spraying and yard-cleaning to permit the inspector to observe the condition of the track."

Hillman anticipates no problem with main-track inspection, "but inspection of the switches and yard tracks is another problem," he said. He added that his president has instructed him to work with the operating department in setting up a schedule for removing yard tracks from service for inspection. Since the road handles two million cars a year, he anticipates a "slight problem" in working out the schedule. To permit effective inspection of the yard tracks, an accelerated track-cleaning program will be required, Hillman explained.

The problems caused by the track-inspection requirements of the standards will be "more in the reporting aspect than in physical inspection," one engineer said. "On the main track, as with other sections of these standards, we are surpassing the requirements . . . but we do not require our yard and back-track inspectors to file a written report," he added. "In some cases this will be the most difficult part of the inspection."

● **End of cycle maintenance.** Illinois Central's Sams expects the FRA standards to require a fundamental change in the way manpower is used. "Our principal efforts in recent years," he said, "have been directed at procedures for more efficient utilization of our labor. Cycle maintenance of tracks is one procedure we have adopted to increase efficiency. It has taken us several years to get into position for cycle maintenance. The Track Safety Standards will change that. In track Classes 4 and 5, for example, where speeds are 40 to 80 mph, there cannot be two adjacent defective ties, and there must be two good ties under a joint. These conditions cannot be maintained without spotting-in a large number of ties. The effect will be virtually to eliminate cycle maintenance of tracks, with great increase in cost. In the future we can expect to see less emphasis on economy and more on maintaining tracks in a manner to comply with the Track Safety Standards."

● **What about the cost?** Some speakers expressed concern about the additional cost of the FRA standards. Said Sams: "Our maintenance-of-way budget for 1972 makes no provision for additional funds to comply with the standards. As a matter of fact, we have no additional funds available for that purpose." Then he made this significant statement: "It will be necessary for us to comply with the standards by whatever means are at our disposal, without increasing the maintenance-of-way allowance."

● **Will spending increase?** One engineer said his road "does not anticipate, at this time, a large increase in our spending, but we do feel that there may be a different emphasis placed on certain projects and new priorities may be assigned." In addition he said: "If we are going to be governed by Federal track standards, we should also be given prompt and fair treatment to discontinue a branch line where the projected future cost renders that line an uneconomic property. To require upgraded standards on sparsely used branch lines and at the same time to deny the option to abandon trackage which has been rendered unprofitable could spell disaster for many railroads." ■

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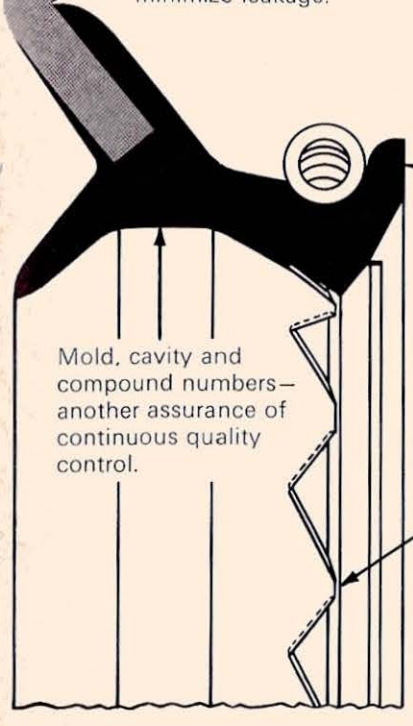

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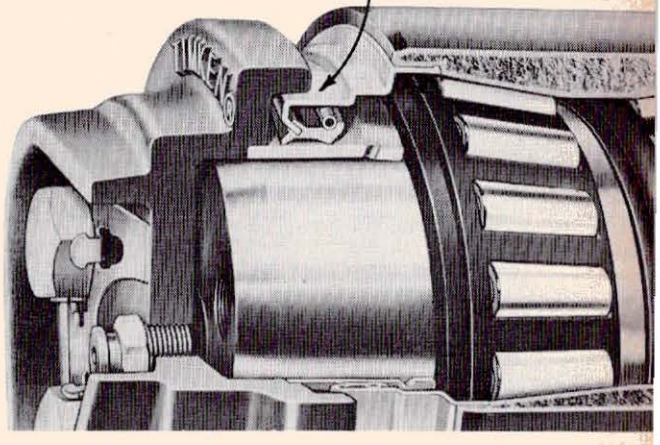

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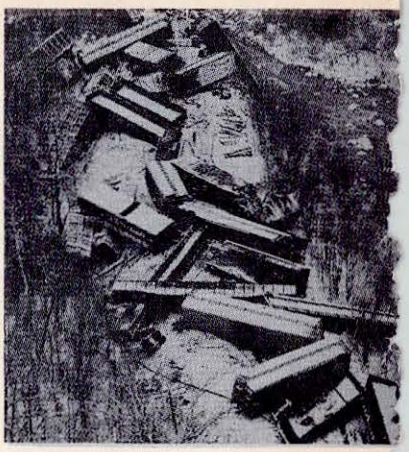
AAR track/train parley explores the



By **ROBERT BARTLEY,** Associate Editor

Officially, the subject of a two-day conference held in Chicago was "Track/Train Dynamics Interaction." It just as easily could have been entitled "What Everybody Wants to Know About Derailments, But Is Afraid to Ask."

Sponsored by the AAR's Operating and Maintenance Department Joint Coordinating Committee and its Research and Test Department, the conference was expected to attract about 125 persons, mostly railroad and research people. Instead, over 300 showed up, including top railroad operating officers, 10 chief mechanical officers and 19 chief engineers, plus leaders from the supply industry, government, educational institutions and research organizations.

The two major aspects of track/train dynamics interaction—interaction mechanics, and train operations and controls—were discussed by 18 different speakers from both the United States and Canada. Furthermore, four panel discussions running simultaneously in the evening of the first day, covered such subjects as: analytical and experimental techniques; performance of freight car component systems; enhancing train operations; and research and instrument cars. Most of the evening sessions drew standing room only crowds, a further indication of the intense interest in learning more about the causes of derailments and how to prevent them.

● **$200-million problem.** The mere mention of a derailment will probably cause more ulcers to pop on railroad properties across the land than anything else. However, of much greater importance is their costs in lives and property. In 1970 alone, for instance, 53 persons were killed in derailments, while another 262 persons were injured. Costs to the industry in damages and clean-up expenses were about $200 million, about half of what all the railroads netted that year.

As was emphasized by D. V. Sartore, chief engineer-design, Burlington Northern, another good reason for stopping derailments "is to avoid the bad publicity and the resultant unfavorable image."

Sartore, who discussed proper placement of cars in a train as one means of reducing derailments, rated safety as the prime consideration when creating a train. Potentially dangerous cars and their placement in the train should get priority treatment. Other factors, he said, are blocking requirements, train schedule, motive power requirements, total tonnage to be handled, terrain to be traversed and type of cars to be handled. These requirements are fairly well defined, he added.

Not as well defined, however, are the criteria on the effect of long cars, curvature, drawbar pull, and so on, Sartore continued. Considerable data has been accumulated on the roles these factors might play in train make-up, but it is not complete. The things that worry Sartore most of all are the "unknowns", those factors which may ultimately cause derailments and about which no data has been made available to the railroads.

● **Juice train problems.** Their railroads' experiences in operating Tropicana juice unit trains between Florida and New Jersey was discussed by Leo Lombardo, manager-research projects, Penn Central, and C. S. Stringfellow, chief equipment engineer, Seaboard Coast Line. All cars in the trains were equipped with end-of-car hydraulic cushioning. When the first train started operating, the problems were so severe that it was eventually removed from service.

This train, which carries approximately one million gallons of juice on a once-a-week schedule, eventually was returned to service after several modifications and is now "proceeding successfully," according to Stringfellow.

It was determined after several derailments early in the operation of the train that end-of-car cushioning created no problem in train operations due to terrain. The different characteristics of train action, however, did cause problems in the area of track/train interaction. Operating procedures had to be reviewed to assure that locomotive braking did not work to escalate resulting longitudinal forces.

In the Tropicana train tests—which began in 1970 and are still being carried out—PC, SCL and FreightMaster researchers found that the highest forces in the train generally occurred on the rear portions. This led to the conclusion, Lombardo and Stringfellow said, that "longer trains of these cars would introduce no complicating problems."

In the course of the tests, considerable data was collected on run-ins and run-outs and the effects train and locomotive braking have on the forces which developed in the train. In an analysis of over 400 events, the average maximum force developed during run-out action was less than 100,000 lb. The absolute maximum measured for a run-out was 283,000 lb. Also, the maximum forces were found in the rear two-thirds of the train and they occurred at speeds between 40 and 50 mph.

As for run-in action, the highest forces seemed to be encountered at low speed. When both terrain and locomotive brake were acting on the train to cause slack action, the two combined to produce extremely high forces, some as high as 342,000 lb. During the course of the Tropicana train tests, several derailments and train partings were encountered. In some cases, couplers were damaged severely by the train forces, and equipment modifications were required. Testing continues into this unusual aspect of track/train dynamics interaction, the two speakers added.

● **Topics varied.** Other subjects covered in the field of train operations and control during the two-day conference were: (1) ride and tracking vibration problems of TOFC-COFC cars in high-speed operation, presented by Dr. W. N. Caldwell, research engineer with the Canadian National; (2) reliability analysis approach to improving train operation, by A. E. Hinson, manager-research and test, and R. F. Tuve, manager-quality control engineering, both of the Southern; (3) operation of a unit train with radio-controlled helper locomotives, by C. W. Parker, assistant chief of motive power, CP Rail; and (4) application of rail/vehicle dynamic analysis to train operation, by E. F. Lind, manager-analytical engineering, Southern Pacific.

In the realm of interaction dynamics, the subjects and speakers were: (1) the care and feeding of modern unit trains, presented by L. A. Peterson, director of applied research, Bessemer & Lake Erie; (2) a dynamic track analyzer system, by R. P. Hoffman, manager-train accident prevention, Chicago & North

mysteries of derailments

Many sessions at the conference, first of its kind, drew standing-room-only audiences.

Western; (3) influence of track irregularities on freight car vibrations, by S. Guins, professor, Michigan State University; (4) using track inspection cars to measure track parameters, by W. B. Sullivan, staff engineer, Federal Railroad Administration; (5) use of Southern's track inspection car to measure track parameters, by E. A. Fernandez, Jr., electronic engineer; (6) train action on undulating profiles, by Dr. J. P. Wilson, research engineer, CN; and (7) wheel-rail loadings for diesel locomotives, by L. F. Koci, chief locomotive engineer, Electro-Motive. Also, E. Phillips, on leave from his post as chief engineer, Union Tank, to serve as project director of a special tank car safety research program sponsored by the AAR and the Railway Progress Institute, reported on the status of this important project.

● **No vast technological wasteland.** The depth into which the conference penetrated track/train dynamics interaction prompted W. J. Weatherall, assistant vice president and chief mechanical officer of the C&NW, and an evening panel moderator, to comment afterwards, "I think we're all convinced now that the railroads aren't a vast technological wasteland."

The evening programs certainly proved that. R. H. Brodeur, director of engineering and research at Trailer Train, and R. Barrett, an engineer with FreightMaster, were explaining in one room a program that was developed for evaluating the ride quality of the present standard AAR car truck under an 89-ft flat car. In another room, E. R. Tyler, general road foreman of equipment and air brake supervisors, was explaining the operation of a train handling indicator which had been developed on his road, the Frisco, to show track profiles to locomotive engineers before they actually encounter them.

Meanwhile, in still another room, numerous research cars, including one owned by the CN, the FreightMaster car, and the Department of Transportation's own rolling laboratory, were being discussed. Over in another room, a panel discussion on analytical and experimental techniques, computer simulations and predictions and structures analysis had an overflowing crowd.

Both the Santa Fe and the SP, owners of the nation's only locomotive simulators, made presentations at one of the evening sessions. Santa Fe's H. N. Chastain, chief mechanical officer, and Gordon Adams, SP's research engineer, reported that the simulators are achieving tremendous successes in training prospective enginemen on their respective lines. Chastain reported receiving a number of letters from veteran conductors praising the skillfulness of young graduates of the simulator training course. Adams reported similar reactions among veteran train operating personnel to the skills of graduates of the SP simulator, which was moved recently to new quarters in the Los Angeles area. The cost for training enginemen is running between $3,200 and $3,300 in Santa Fe's mobile simulator, and close to $7,500 in SP's, it was reported.

● **Major project on SP.** Some of the more important research projects affecting the entire railroad industry are being conducted on the SP. Just two weeks prior to the Chicago conference on track/train interaction, AAR's president, Stephen Ailes, announced in Washington that the AAR's research budget was being raised by 70% in 1972, and part of this increase would help finance a project on the SP aimed at finding what has to be done nationally to solve the track/train dynamics problem.

SP's Ed Lind explained to the conference what the basic objectives of the program will be. They are:

—Conduct a preliminary overview of the current state of knowledge of track/train dynamics, and then determine what further work has to be done;

—Define the elements of track/train dynamics, and evaluate them, using the most modern techniques available; Also, the principal problems will have to be identified, priorities will have to be established and approaches to solutions in the main problem areas will have to be developed;

—A concept of the general research effort needed to establish computer models must be developed and a definition will have to be made of the instrumentation required to collect all the field data for the model development;

—Study the dynamics problem on both a long-term and short-term basis, and develop solutions that can be put to use as rapidly as possible.

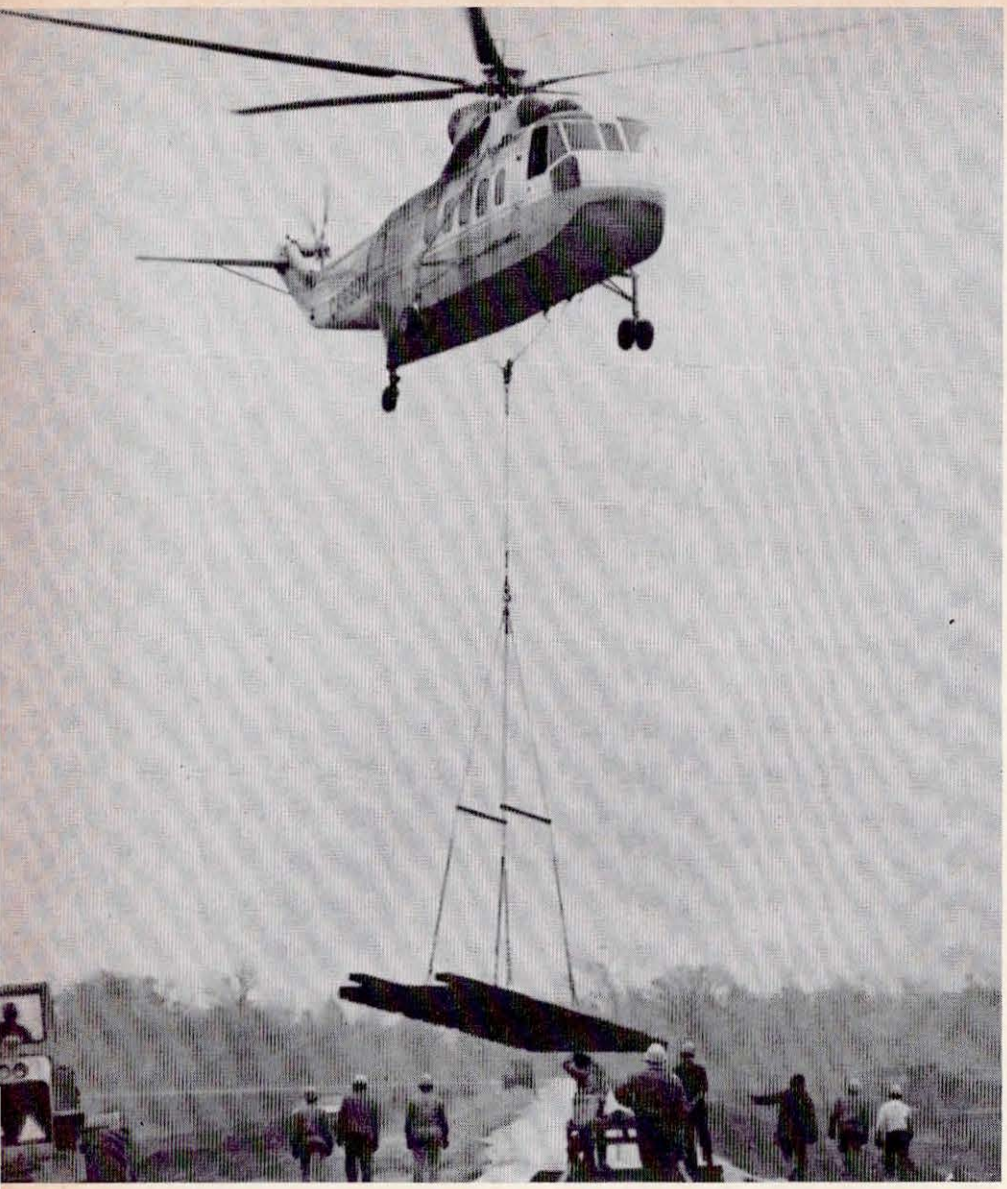
● **Safety gets top priority.** Continuing with his explanation of how the AAR-SP study of the interaction problem will be conducted, Lind said the various tasks will be assigned according to their importance, with safety getting top priority. Other facets which will be examined are service interruptions, economic impacts, potential for improvement or correction, and so on. Furthermore, investigations will be made into time frames and work schedules, costs and cost benefit features, and recommendations will be developed on what type of organization or facility might be needed to conduct each phase of research. Ultimately, a master plan will be submitted to the AAR on what is needed for research into all aspects of track/train dynamics interaction, Lind said.

Another important point which will be developed in the course of the investigation, he continued, is the determination of how the research plan will be managed—either by an individual, a group of individuals or an organization. Lind added that he did not expect to encounter any unusual difficulties because field contacts he had made up until the time of the conference indicated "a high level of interest and concern about track/train dynamics problems."

Chairman of the two-day conference was Robert Byrne, AAR research director. At the conclusion of the conference, it was announced by Dr. W. J. Harris, Jr., vice president of the AAR research and test department, that, after 18 years of service with the AAR, Byrne was moving up to the post of manager of research at the SP, effective Jan. 16.

As Harris indicated, the two-day conference, the first of its type ever held, certainly proved that "the train is a very complicated system, and the track is, too." During the course of the year, the AAR plans to give full support to the SP study of track/train interaction, he added, and also plans to pursue an aggressive program aimed at improving coupler performance. Full support of programs at DOT's Pueblo test center will be offered.

The ultimate goal, he concluded, is to provide "a guaranteed ride" for shippers' goods. ■



TRACK PANELS were transported and placed by the helicopter on a cycle of about four minutes. The degree of accuracy was high, according to the contractor.

Helicopter doubles as a track-laying machine

Whoever heard of using a helicopter to airlift track panels and place them into final position in the track? Perhaps this idea had glimmered briefly in the mind of a trackman or track contractor, but it had never been tried—until recently.

Now, a contractor has put the idea into practice and he is pleased with the experiment. "If we get in a jam in building railroad trackage, we know how to get out of it," he says.

This is Robert J. Horth, partner in the Central Engineering & Contracting Co., Indianapolis, Ind., a railroad contractor. He was referring to a project in which the firm decided to try using a helicopter to airlift track panels into position in a spur track the company was building to a generating plant. "We found it was a practical way of doing the job," says Horth.

● **Spur track involved.** The project involved construction of a five-mile spur track to a 1.3-million-kilowatt steam-powered generating station under construction in Gibson County, Ind., by the Public Service Company of Indiana.

The spur connects Penn Central with the generating station. More than 3.6 million tons of coal will be moved over the siding each year.

In building the spur the contractor used conventional methods for hauling and placing the 39-foot panels for a portion of the line and then switched to the helicopter for laying a half-mile of track. After that he finished the job using the conventional approach.

At the time the helicopter was brought into use, the track construction site was about two miles from the yard, where the panels were assembled. The helicopter used—owned and operated by Carson Helicopters, Inc., Pekasie, Pa.—was a giant Sikorsky S-61. For handling the panels a cable sling, fastened to the panel rails at four points, was used.

To transport a panel, the helicopter was maneuvered into position over the panel so the ground crew could attach the cable sling. At a signal that the sling was attached, the helicopter sped away with its four-ton load. At the rail head the helicopter lowered the panel to an elevation about three feet above the ground. Then, at a signal from the ground, the load was eased into final position. While the panel was being bolted to the panel previously laid, the helicopter was on its way back for another load. After the crew had acquired some experience, track-laying proceeded at a rate of a panel about every four minutes, the contractor states.

Douglas R. Horth, a partner in the contracting firm, says he had long considered testing the capability of a helicopter as a track-laying machine: "We wanted to have the experience. It hadn't been done, but we couldn't see any reason why it shouldn't be. Carson Helicopters felt the same way—so we arranged to do the job."

Reports of the contractor are that the helicopter proved entirely practical and feasible as a panel-laying machine. The degree of accuracy in placing the panels was said to be comparable to that when laying the panels with a crane. It was indicated that the cost of laying track panels with a helicopter was somewhat greater than when conventional methods are used. Even so, use of the helicopter could be justified in situations where the work site, because of muddy conditions, would not otherwise be accessible.

Douglas Horth predicts that "helicopters will be laying a lot more railroad track, especially in areas not accessible to conventional equipment." ■

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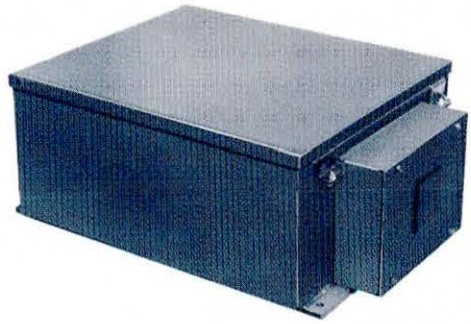

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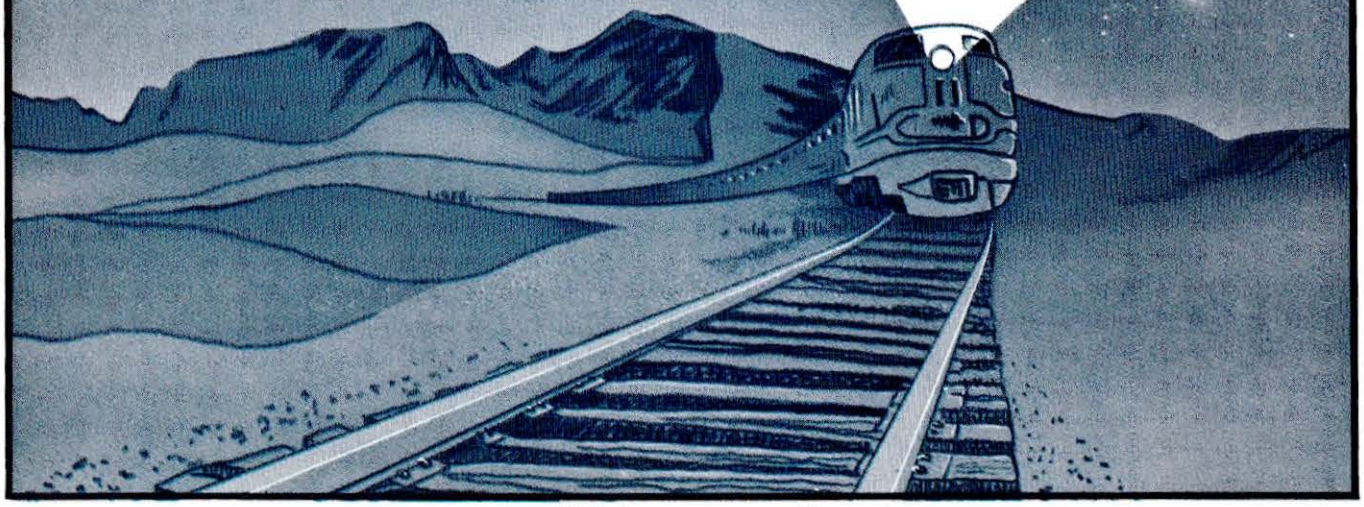

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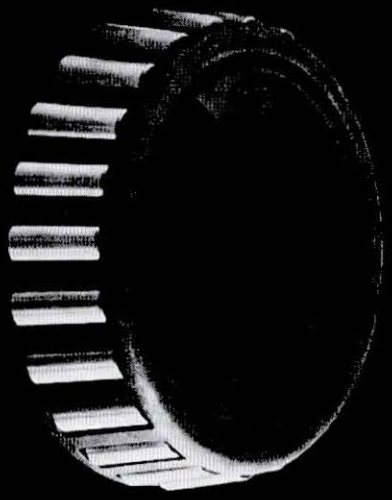

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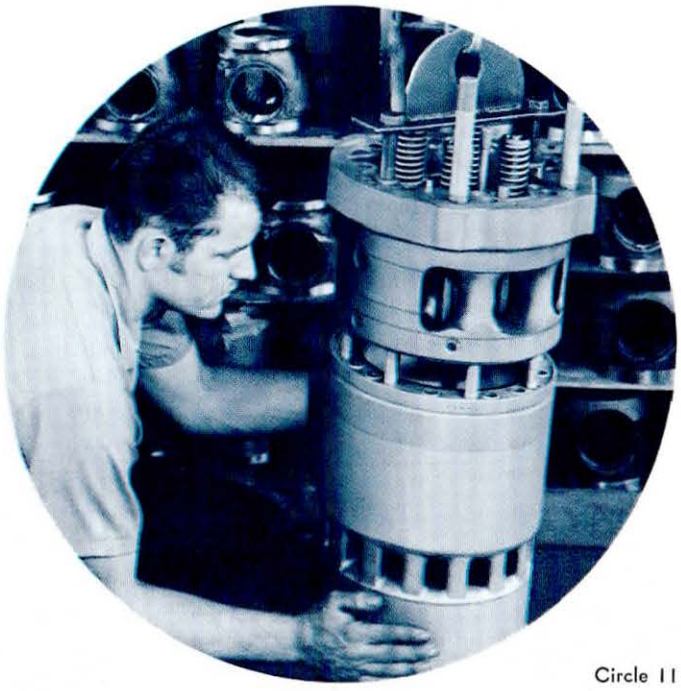

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Each nickel stainless steel car for the history-making new Philadelphia-Lindenwold Line cost PATCO $200,000. But in the long run, buying cars of this superior transit car material should prove to be a genuine bargain.

The Lindenwold Line is truly a showpiece of modern mass transportation in every respect.

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Because they're lighter than cars of standard materials, they require less electricity for propulsion. So PATCO will actually save money on power.

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Finally, because nickel stainless steel combines high strength with exceptional toughness, it provides maximum passenger safety...

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For more information on nickel stainless steel for railway and transit cars, write to Dept. RA-172, The International Nickel Company, One New York Plaza, New York, N.Y. 10004. In Canada, The International Nickel Company of Canada, Limited, P.O. Box 44, Toronto-Dominion Centre, Toronto 111, Ontario.

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New Products Report

Plastic glazing (RA-1)

Transparent polycarbonate sheets coated with glass resins are replacing regular windows in railroad rolling stock. The polycarbonate sheet coated on both sides with an 0.5-mil thickness of Type 650 glass resin is said to have impact resistance far superior to an ordinary window pane. In addition, the coating imparts abrasion and chemical resistance to the polycarbonate. *Owens-Illinois.*

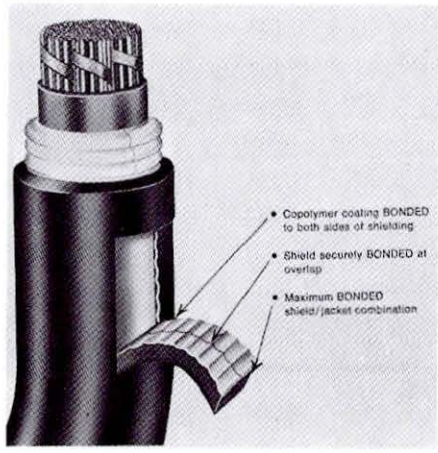
Water conditioner (RA-2)

The C-6 water conditioning unit is compact and has a very high capacity that helps overcome the bother and inconvenience of supplying bottled water. It employs no chemicals, no salts, no electricity, no moving parts. The C-6 double-filtration system instantly removes the bad tastes of chlorine, hydrogen sulfide, iron rust, sediment, slime, algae, all organic tastes, odors and other impurities in existing water sources. The hermetically-sealed unit, plus pre-filter, requires a floor space of 6 in. by 12 in. (the unit is 20 in. tall), and is easily installed. The units retail from $130. *Killians Engineering.*

Carrier phone (RA-3)

A portable carrier phone is designed to provide communications over existing lines without interference to existing signals of other frequencies. The unit would normally be used while installing or maintaining CTC systems, hotbox detectors, or anything requiring communications between two points up to 100 miles apart. The unit available in frequencies from 35 KHz to 300 KHz, is

AM modulated. It features push to talk with hand-free switch, speaker monitoring, earphone monitoring, battery operation with built-in battery charger, external 12-volt DC jack, modulation limiter, and automatic volume control. *Harmon Electronics Inc.*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Communications cable (RA-4)

A bonded communications cable featuring a copolymer coated shield is designed to give positive protection against moisture. Called MPR (Moisture Permeation Resistant), the cable has a copolymer coating on both sides of a corrugated aluminum shield. The shield is laminated to the polyethylene jacket by an exclusive bonding process and is tightly sealed at the overlap to

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further eliminate moisture permeation. Conventional splicing techniques can be used and cable shields can be bonded and terminated using currently available products.

MPR cable is available in a full range of pair counts and gauges, in single or double jacket, or figure eight construction. Application range includes aerial, duct and direct burial installation. *Anaconda Wire & Cable Co.*

Improved VOM (RA-5)

The improvements incorporated in the new 260 series volt-ohm-milliammeter include an external access battery and fuse compartment; large positive-grip rubber feet which hold the instrument securely on a bench; 0-1 volt DC range; 0-500 volt AC and DC ranges; option 5k-volt safety probe; and multi-purpose, screw-on test leads with combination probe and alligator clips.

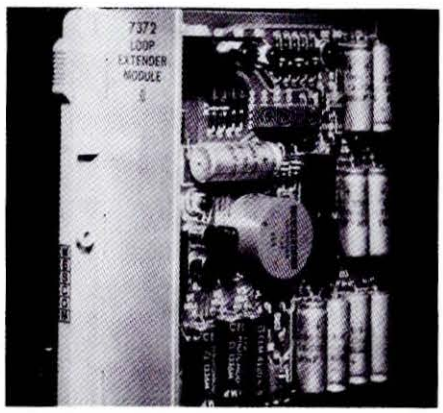
The 260-6 requires only two batteries; one 9-volt NEDA 1604 and one 1.5-volt "D" cell NEDA 13F. Rugged taut band movement and varistor overload protection are also standard. Accuracy: DC, ± 2% of full scale; AC, ± 3% of full scale. *Simpson Electric Co.*

Lightning arrester (RA-6)

A secondary lightning arrester is for protecting electrical and electronic equipment on conventional 120 volt, 60 Hz power circuits. Model 1250-01 secondary arrester is a 1-pole, 2-wire device for use on grounded 2 or 3 wire single phase, or grounded 4-wire 3-phase "Y" connected circuits. It is recommended for protection against overvoltages caused by switching surges or lightning discharges.

The new arrester meets or exceeds IEEE 28-USAS C62.1 and NEMA LA-1 Specifications. It functions at lower

impulse sparkover and discharge voltages than commonly available arresters, thus providing better protection for electrical and electronic equipment. High discharge current capacity and power follow current interruption capabilities have been retained. *Joslyn Electronic Systems.*



Loop extender (RA-7)

A new "battery boost" loop extender module No. 7372 extends the subscriber's supervisory, dialing and ring trip range from a central office. The plug-in module inserts a floating voltage source in series with the tip and ring conductors in the central office. Individual battery boost per card is derived from an internal DC to DC converter. The converter is automatically turned off when the circuit is idle. As little as 6 ma of loop current will cause the converter to turn on, after which loop current is regulated to eliminate the need for voltage strapping options on intermediate length loops. The 7372 Extender provides loop current in excess of 23 ma on a 3,000 ohm loop. The 7372 module can be used on loop or ground circuits, coin lines, SATT, ANI and spotter dial operations. The loop extender provides DC boost during the ring interval to aid ring trip. *Wescom Inc.*

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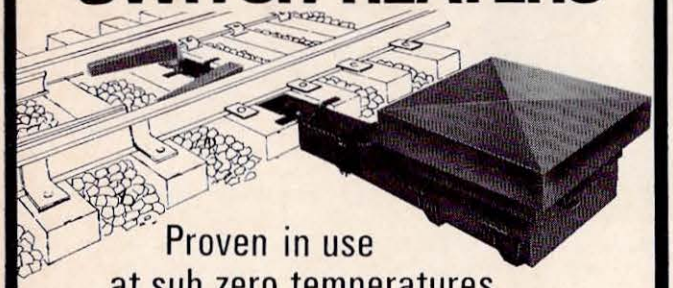

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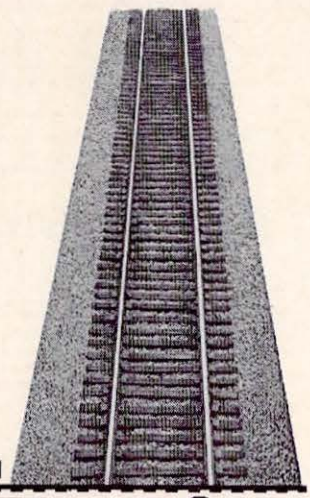

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Circle 15 on coupon page 37

People in the News

Richard H. George
D&H

Charles G. Cross
TRRA

Wm. P. Raines
UP

Harry J. Bruce
WP

BOSTON & MAINE.—Charles R. Drake appointed assistant chief traffic officer—sales, Boston, Mass. Mr. Drake was formerly director sales—staff, **Penn Central,** Philadelphia.

BURLINGTON NORTHERN.— D. W. Stevens appointed assistant director, maintenance planning, St. Paul, to succeed **V. C. Hankins,** who retired Jan. 1 after 46 years of railroad service. **E. P. Conners** named general supervisor work equipment, St. Paul.

DELAWARE & HUDSON.—Richard H. George, freight traffic manager, New York, elected vice president of traffic, succeeding **Paul F. Robinson,** who retired Dec. 31.

ERIE LACKAWANNA.—Harry A. Zilli, Jr. appointed assistant treasurer and assistant secretary, succeeding **George R. Oliver,** who retired Jan. 1 after 42 years of service. Mr. Zilli, a former assistant to comptroller, returns to EL after six years of service outside the industry.

William W. Hazard, administrative engineer, Cleveland, retired Jan. 1, after more than 44 years of service.

TERMINAL RAILROAD ASSN. OF ST. LOUIS.—Charles G. Cross, general traffic manager, elected vice president—traffic.

UNION PACIFIC.—William P. Raines elected to the newly created position of vice president—corporate relations. Mr. Raines formerly was vice president and director of public affairs for Johns-Manville Sales Corp. At UP Mr. Raines' responsibilities will include financial public relations, press relations and coordination of the public relations activities of all components of the corporation.

Robert F. Pettigrew, vice president—traffic, Omaha, Neb., promoted to the newly created position of vice president—executive department. **Walter P. Barrett,** vice president—sales and service, succeeds Mr. Pettigrew as vice president—traffic.

D. L. Castle appointed purchasing agent, Albina, Oregon.

WESTERN RAILROAD ASSN.—Effective Jan. 10, offices of **WRA** and the **Executive Committee-Western Railroad Traffic Assn.** and their affiliated rate and service organizations moved from the Chicago Union Station building to 223 So. Riverside Plaza, Chicago, Ill. 60606.

WESTERN PACIFIC. — Harry J. Bruce elected vice president-marketing, to succeed **Walter C. Brunberg,** elected vice president-industrial development. Mr. Bruce was formerly director of distribution, **Jos. Schlitz Brewing Co.**

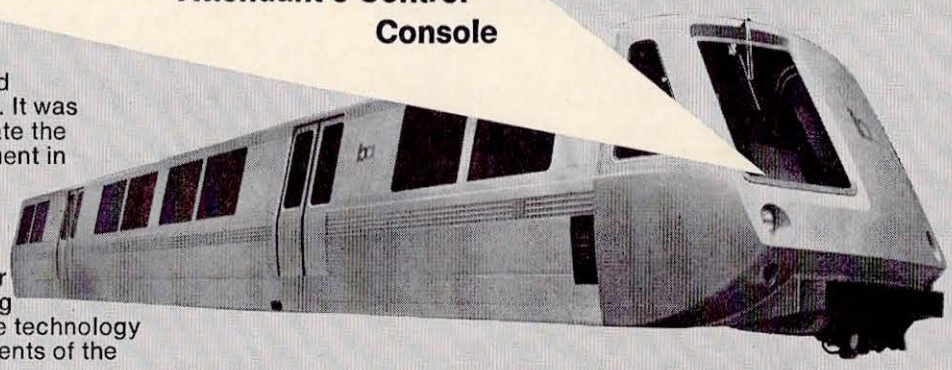
OBITUARY

H. Arnold Giles, vice president of **E. F. Timme & Son, Inc.,** manufacturers of upholstery fabrics for the railroad industry, died Dec. 2.

BART...
...ANELLUX IS AT THE CONTROLS!

Anellux Systems' Mobil-Communication Division's Command, Control and Communications Equipment is being used exclusively throughout the San Francisco Bay Area Transportation system. It combines the latest development in rapid transit technology with the newest jet-age electronics.

BART Attendant's Control Console



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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Dec. 25 totaled 415,717 cars, according to the Association of American Railroads. This was a decrease of 62,518 cars, or 13.1%, compared with the previous week, and an increase of 24,192 cars, or 6.2%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Dec. 25 are estimated at 12.3 billion, an increase of 9.1% above the corresponding week of 1970.

REVENUE FREIGHT CARLOADINGS

Commodity	Dec. 25 week	Dec. 18 week
Grain	20,418	20,742
Farm products	17,209	17,847
Metallic ores	18,293	20,909
Coal	88,085	100,522
Crushed stone, gravel & sand	17,332	21,455
Nonmetallic minerals	7,619	8,553
Grain mill products	16,532	18,210
Food and kindred products	21,141	23,613
Primary forest products	20,441	24,553
Lumber & wood products (except furniture)	15,276	15,536
Pulp, paper & allied products	20,539	22,348
Chemicals & allied products	22,891	25,300
Petroleum products	8,666	9,590
Stone, clay & glass products	13,901	16,699
Coke	4,698	6,235
Metals & products	16,299	18,551
Motor vehicles & equipment	16,333	24,064
Waste & scrap materials	10,995	13,163
Forwarder & shipper assn. traffic	4,916	5,800
All other carloads	53,753	64,127
LCL traffic	380	418
Total cars loaded	415,717	478,235

CUMULATIVE TOTAL, 52 weeks	1971	1970	1969
	25,260,858	27,160,247	28,237,407
Estimated revenue ton-miles (billions) 52 weeks	738.3	764.8	767.8

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Dec. 18 totaled 24,901 cars (6.4% above the corresponding week last year) and 40,626 trailers or containers (up 9.3% from 1970). Cumulative volume for the first 51 weeks of 1971 is 1,176,385 cars (off 5.1% from last year) and 1,929,584 trailers or containers (down 3.3% from 1970). In addition to freight, 4,457 cars carrying 7,037 trailers or containers of mail and express traffic were handled piggyback. Cumulative figures for the first 51 weeks of 1971 are 154,240 cars (down 17.9% from the 1970 total) and 236,181 trailers or containers (down 16.8% from 1970).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Dec. 7, 1971	4,274,407	200,061,788
Dec. 7, 1970	3,903,917	195,061,788

● *Illinois Central.*—Will acquire 50 box cars, 100 wood-chip hopper cars, 100 gondolas, 100 coal hopper cars and 50 cabooses. In addition, 1,900 cars are scheduled for rebuild and 3,400 for heavy repair.

● *Penn Central.*—Will acquire 1,500 new 100-ton, open-top hopper cars, valued at $24.3 million, through a major leasing company which will purchase the cars from Bethlehem Steel. Deliveries are to begin in late February and be completed by the end of May. Bethlehem's Johnstown, Pa., plant is already building 2,520 other open-top hoppers leased to Penn Central.

● *Freight-car orders and deliveries.*—The following report was released Jan. 5 by the American Railway Car Institute:

DELIVERED

	Nov. 1971	Oct. 1971	Nov. 1970
Built new by car builders	4,046	4,569	3,834
Built new in R. R. shops	113	269	996
Built new—total	4,159	4,865	4,830
Rebuilt	504	410	1,129
TOTAL DELIVERED	**4,663**	**5,275**	**5,959**

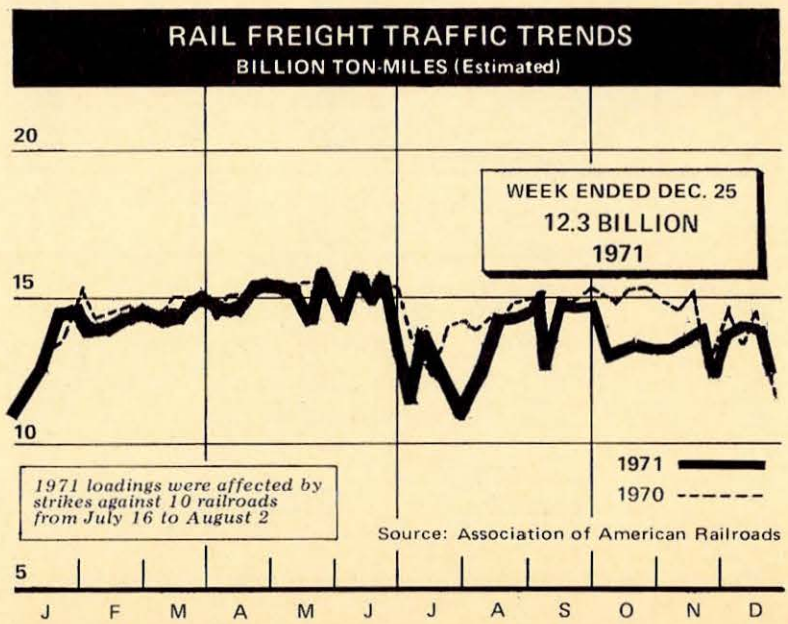
ORDERED

To be built new by car builders	3,418	6,873	8,026
To be built new in R. R. shops	100	600	138
To be built new—total	3,518	7,473	8,164
To be rebuilt	200	500	1,100
TOTAL ORDERED	**3,718**	**7,973**	**9,264**

ON ORDER AND UNDELIVERED

	Dec. 1, 1971	Nov. 1, 1971	Dec. 1, 1970
To be built new by car builders	21,789	22,426	20,774
To be built new in R. R. shops	3,424	3,437	2,842
To be built new—total	25,213	25,863	23,616
To be rebuilt	1,788	2,092	3,560
TOTAL ON ORDER	**27,001**	**27,955**	**27,176**

● *Illinois Central.*—Program for 1972 will include rebuild of 40 GP-type units, 20 switch units and 14 mate-and-master units. Twenty units will be repowered, 30 will undergo repair.



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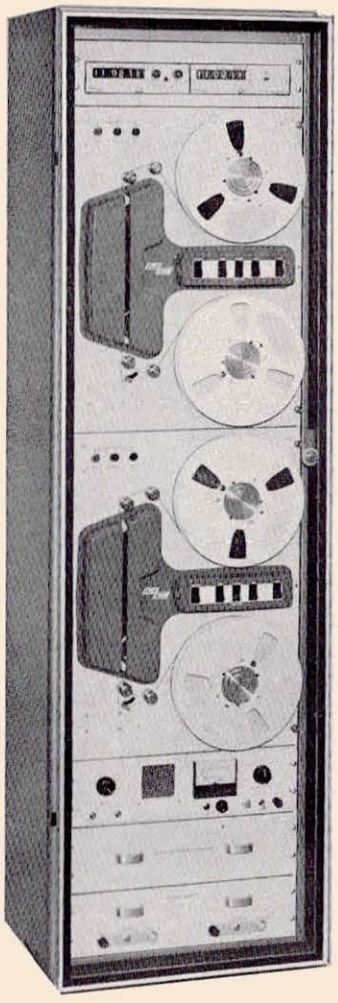

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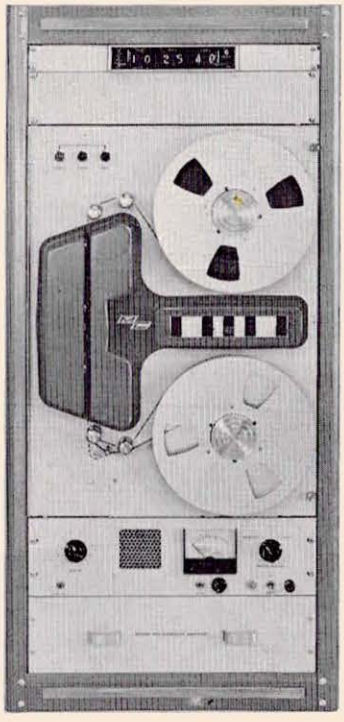

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Circle 22 on coupon page 37

Auto-Train: A progress report

(Continued from page 23)
designed by Swindell-Dressler. Buck-Dessa supplied the unloaders.]

Q. What initially sparked your interest in Auto-Train? Are you a railroad buff?
A. I couldn't call myself a rail buff; but I don't fly unless it's an emergency. I just don't like to fly. I prefer to take the train. I have taken the train whenever and however I could, but I was extremely disappointed in the quality of service whenever I was on a train. Airlines give first class service. They try to please the traveler. I felt there was a service void on trains, for whatever reason, justifiable or not. Once I decided to provide a rail passenger type of service it had to be the best.

I went to Rutgers University in New Jersey, and traveled to Florida during recesses. I drove back and forth a lot. I took the train a lot, too. The idea of having my car there, and yet not driving all the way, intrigued me. I read the studies. The Department of Transportation said it could be done. Congress said it could be done.

What was really a spark that turned into a great big fire was the sheer numbers of automobiles traveling to and from Florida every day. It was as simple as that. The idea had to work, if it were done right. We have tried to do it right.

Q. Do you think there are lessons for railroad passenger service generally—for example, the Broadway Limited—to be derived from the Auto-Train experience?
A. The Broadway offers a different kind of service. It is really not fair to relate the Auto-Train trip to the Broadway.

We don't hold ourselves out to teach others until we have been fully educated ourselves, and we have a lot of learning to do. We are young. I am 35. The average age of my staff is 32. Probably the quickest criticism to be made of us could be our lack of experience. But I don't see that as a problem. I think the record at this point shows that we knew what we were doing—in our particular area. Our particular area was designing, developing and establishing and operating an Auto-Train and an Auto-Train service. We may or may not have had the experience of running an airline or a major freight-service railroad system or a steamship line, but I will match our team against anyone in the whole wide world in terms of running an Auto-Train. ■

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Viewpoint

Mr. Biaggini again has the answer

It was not too long ago that a leading spokesman for the railroad industry commanded his principal speechwriter to insert jokes at two-minute intervals to ensure enthusiastic audience response. Guffaws he got; there is no record that he accomplished much more than that in the arena of public speaking (though his achievements elsewhere were great).

And there are still those within the industry whose response to what they consider to be an ill-informed query is, "Well, that's a stupid question." Whereupon the stupid questioner doubtless goes off and casts a stupid vote—against the railroads.

But more and more in recent times, the industry has learned to explain itself, in patient, thoughtful and persuasive terms.

One man who is exceptionally fast, and good, with the answers is Southern Pacific President Benjamin F. Biaggini. Freight railroading has few spokesmen as effective as SP's chief executive officer. Take just one example from the recent Biaggini interview published in U.S. News and World Report. Mr. Biaggini began by stating the need for the kind of Federal loan-guarantee program that is now before Congress: "The railroad industry needs large amounts of capital," he said, "because we have to look forward to a tremendous growth in demand for transportation over the next 10 to 15 years. And the railroads need much more equipment. You can't carry twice as much traffic without adding maybe 50% more freight cars. . . .

"There is a large pent-up demand for capital. But how to get it is the problem. I personally do not lean toward a large program of government grants or subsidies. However, I very much support loan guarantees."

Then came the inevitable question: "If the industry is expecting a growing market, why do lenders want the Government to guarantee the securities?"

Mr. Biaggini did not content himself with the statement that "strong railroads are irrevocably tied to the weaker ones." He told why this is so. For example:

"The furnishing of equipment for shippers who are located on a particular railroad's lines is usually the responsibility of that road. If you have a plant on the Southern Pacific, you naturally look to Southern Pacific to supply your freight cars. If you're on the North Western or the Milwaukee or the Santa Fe, or the Erie Lackawanna, you look to those roads for cars.

"In recent years, we've seen a gradual decline in the ability of certain railroads to furnish their fair share of cars and locomotives. And the job is just too big for the relatively few prosperous roads to supply the bulk of the equipment. Government backing for loans to buy the needed equipment would go a long way toward strengthening our whole railroad system."

AN APPROACH WORTH COPYING

And that was it. Not a p.r. man's parry. Not a plea for a share of Federal help because competitors of the railroads have had theirs. But a businesslike explanation that businessmen can understand.

Mr. Biaggini's specific reply to the "if-you're-so-smart, etc." question is worth copying. So is his whole approach to the art of explaining.

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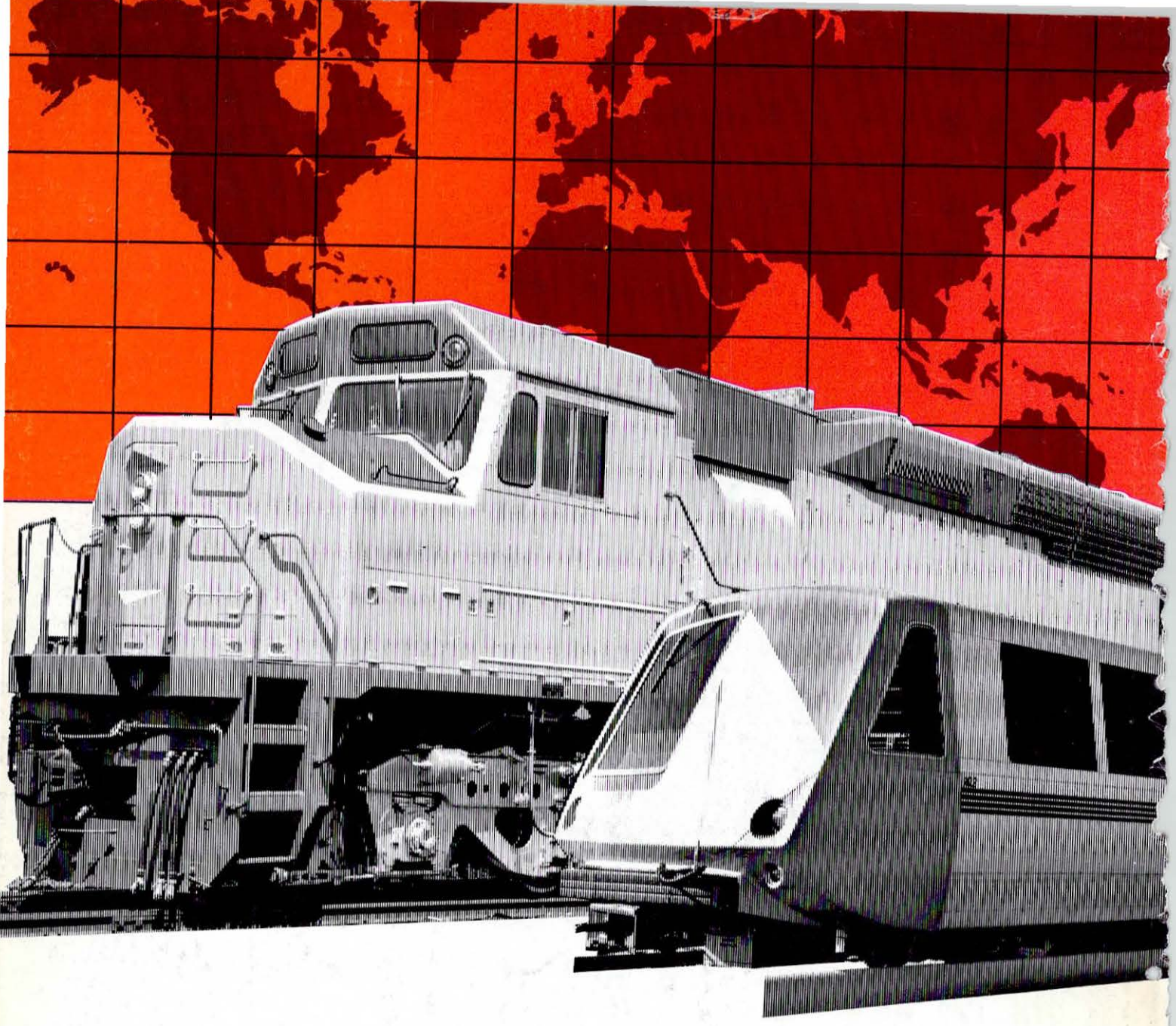

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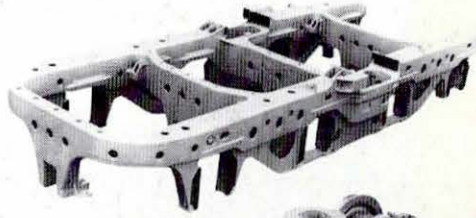

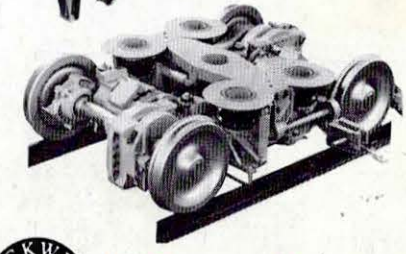

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